ZOO PUBLISHING

Issue017 January 2007 $4 / €3.25 / £2.25

3dcreative

07 HEAVEN

New year, new look and a new line up of the best interviews, articles, tutorials and making of's!



ARTICLES
'Making 'Those Chairs", 'Flushed Away' & Top Advice for Aspiring Artists!



INTERVIEWS
Bingo Studio & Michael van den Bosch



GALLERIES
Anna Celarek, Tiziano Fioriti, Piotrek Gruszka, Arnaud Servouze & More!



MAKING OF'S
Revolution by ZhangYang & Ford Mustang by Zdenek Urbánek



TUTORIALS
New 6-part Series for 5 Packages: Tuc Tuc, plus Posing & Rigging in 3DS Max



Editorial

Hello once again to 3DCreative Magazine. After over a year in business we have decided to push the bar a little further... We have an enourmous list of great interviews, articles, making of's and tutorials ready for you this year, and we guarantee that every magazine will be as good as, if not better than, this month's monster issue! We hope you all had a good New Year, plus any other celebrations over the December period. Early January for us is usually a case of "back to work blues", but im rather (sadly) excited about getting back to the desk and putting together the new issues of both 3DCreative and 2DArtist mags, checking out all of the new gallery submissions and reading through all those interview answers, learning a thing or two from one of the many great tutorials we have on offer, and also (ashamedly) looking forward to ploughing through my 500+ email inbox from the festive period, to see what you guys have said about the mags and what suggestions you have all made. Hopefully I'll have the inbox cleared by late February, but keep the mails coming in anyway as we do reply to every single one of you! A big thanks to all of you for keeping us going, and also to all of our contributors, some of whom give up their time (usually around very busy schedules) to bring quality content to the masses! All the best for the New Year, Ed & the 3DCreative Team.

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Free Stuff!

Keep an eye out for similar symbols to this throughout the mag. Wherever you see this symbol, click it to download resources, extras and even movies!





Luciano Iurino

I started back in 1994, with 3DStudio on MS-Dos, as a Modeller/Texture Artist. In 2001, I co-founded PM Studios & still work for it as Lead 3D Artist. Recently we have developed the videogame “ETROM – The Astral Essence”. I also work as a freelancer for different magazines, web-portals, GFX & videogame companies. Recently I left the 3DS Max environment to move on to XSI.

iuri@pmstudios.it



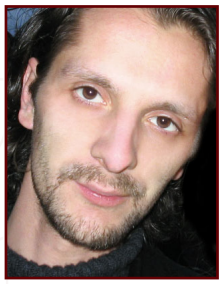
Contributing Artists

Every month, many creatives and artists from around the world contribute to 3DCreative Magazine. Here you can read all about them. If you would like to be a part of either 3DCreative or 2DArtist Magazines, please contact ben@zoopublishing.com.



TUC-TUC

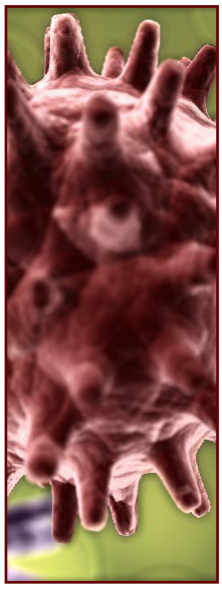
Tuc-Tuc Tutorial Artists: these wonderful people are responsible for translatiing our 3DSMax content for Cinema 4D, Maya, Lightwave & Softimage XSi. Most of them have been with us since the Joan of Arc series and have all worked on the highly popular Swordmaster Series...

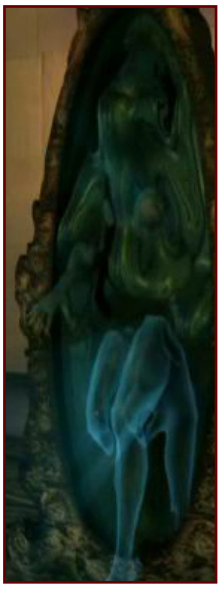


Vojislav Milanovic

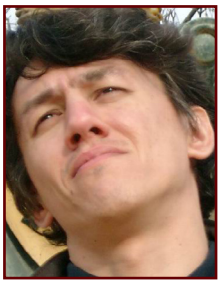
3D Modeller, Animator, VFX Compositor, Anigraph Studio, self-taught, all-round 3D-guy. I started to “doodle” around in 3D about 8 years ago. In the last 5 years I have done a lot of various things from print & TV ads to gaming & movie graphics. I’m currently involved in multimedia study & character developing for an animated feature movie. One of my goals is to make my own animated movie.

vojo@teol.net http://users.teol.net





Bogdan Horduna



3D VFX Artist in Iasi, Romania. I started back in 1999 with 3DStudio Max, but in 2000 trained in Maya. I’ve been a Modeller and Texturer for few 3D animated movies & two games. I’m also a ‘Modeller, Dynamics & Particles, Lights & Render Supervisor’ for many commercials, musical video-clips and industrial presentations.

ionuts@catv.embit.ro

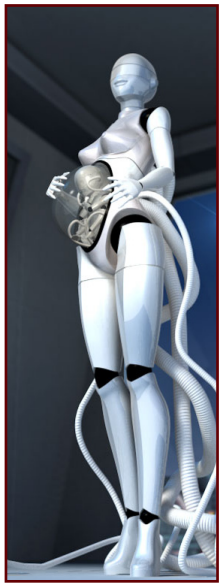
suiobo@yahoo.com



Niki Bartucci

Freelance 3D Modeller, Italy. I started working in Computer Graphics in 2000 as an Illustrator & Web Designer. In 2003, I started using 3D software, such as C4D and, later, 3DS Max. In 2000, I worked on “ETROM - The Astral Essence”, RPG video-game for PC, developed by PM Studios. I’m currently a freelancer & specialise in commercials. I especially like RPG & RTS video-games.

niki@pikoandniki.com www.pikoandniki.com





Giuseppe Guglielmucci



Freelance 3D Modeller/Animator. I began using computers with the epoch of the Vic 20 & Cinema4D was my 1st 3D software. I started working in the field of CG in 1999 in commercial design. In 2003 I worked on “ETROM - The Astral Essence”, RPG video-game for PC, developed by PM Studios. Currently I’m hoping to work in the video-games industry & to develop my own game.

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Zdenek Urbanek

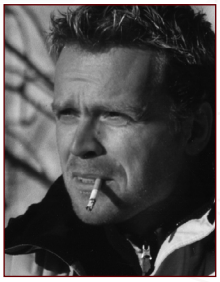
Liberec, Czech Republic. My first experience with 3D Graphics was in 2001. It was a Bryce 3D where I created my first image, after I started learning in 3DStudio Max. I would like work in game development, or film. Now it is mostly my hobby and now I'm working on my own game with my friend.

URBIS.URBIS@seznam.cz



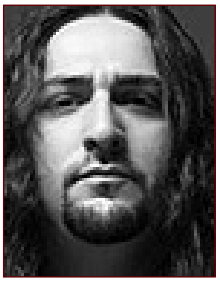


Michael van den Bosch



Freelance Illustrator/ Character Designer, Netherlands. I love to sketch characters with a pencil and bring them to life with my computer. The thing I focus on are the eyes and the personality. My main goal is creating artwork with a message. I hope to see myself doing this for many more years, because there's nothing like being self-employed.

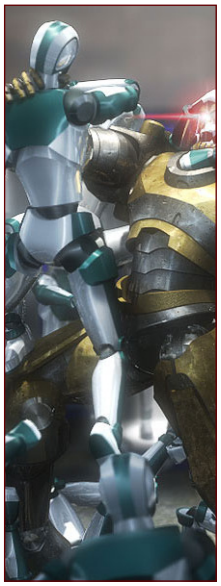
michael@motionchannel.com
http://www.motionchannel.com



Frankino Lupo

Frankino has recently joined our team creating the Lightwave version of 'Tuc Tuc'. Frankino works as a web designer and pixel artists amongst other things.

www.frankinolupo.it
frankino@frankinolupo.it





Zhang Yang



3D Modeller/Texture Artist/VFX Compositor, China, self-taught, all-round. 3DS Max was my first 3D software and then I switched over to Maya through 2002. Now I also use C4D, Z-Brush, Mudbox and like traditional painting. I've worked for a video-game company, animation studio and TV station. At present, I'm a freelancer. My goal is to work for the movie industry.

zhangyangshaoyu99520@hotmail.com
http://zhangyang84.cgsociety.org/gallery/

Would you like to Contribute to 3DCreative or 2DArtist Magazine?

We are always looking for tutorial artists, gallery submissions, potential interviewees, making of writers and more. For more information, send a link to your work here: warin@zoopublishing.com



Bingo Digital

Shanghai Bingo Digital-Media Technology Co. Ltd. is a group composed of young artists devoted to developing CG arts. All members of the team have a wide range of experience in processing CG movies and cartoons. Within a year Bingo had prestige in the industry and quickly collected briefs from 'Fudan Shangke' & 'Coca Cola'. Subsequently, they now work for worldwide well-known companies such as 'News QQ', 'Maiken Light' and more...

Bingo Digital



Thanks for taking the time out to talk with us. Can we begin by finding out a little about how everything started for Bingo Digital? Who were the founders? What was their vision? And how far have you come to achieving this today?

We are a group of youths who are addicted to three-dimensional computer art. Individually we witnessed China's three-dimensional animation emerge and grow. Finally we gathered into one group, named "Bingo", to pursue our dream. Most of the Bingo members are from a large-scale, demonic CG production company. We are all qualified and have received systematic training. We participated in project management and productions, such as a full CG movie, cut scenes of games and animation teleplay, etc. Our goal is to grow into an international top-notch visual special-effects product producer, such as 'Blur'. We hope to achieve this with our high efficiency and prime service.



It sounds like you are very passionate about your work and goals. Are your 3D skills mostly self-taught?

Yes, we are very passionate about our work, because we find the work very interesting







everyday. Mostly we studied our 3D skills by ourselves. Sometimes our company also provides courses for newcomers and trains them in the knowledge of our working production pipeline.

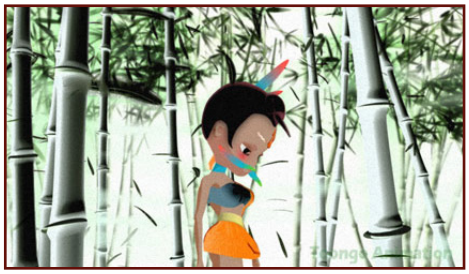
Let's talk Coca Cola! What a great client, you must have been very happy to get them on board. We have seen some of your amazing characters posted on the Net, so can you tell us a bit about the brief Coca Cola set you and what the future holds?

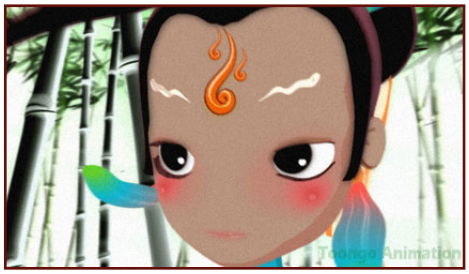
Thanks for your kind words; when Coca Cola (China) contacted us, Bingo was just a studio in an apartment. We were astonished at their invitation as we had been mainly focusing on technological testing, instead of doing public promotions at that time. Coca Cola said their cooperative providers, and other large CG companies in China, could not undertake this project because of the time limit and high quality that was



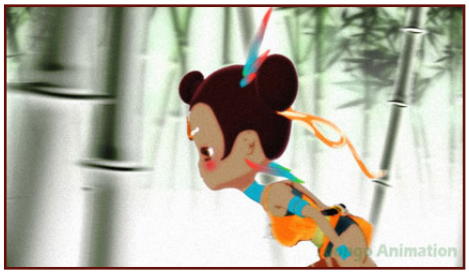








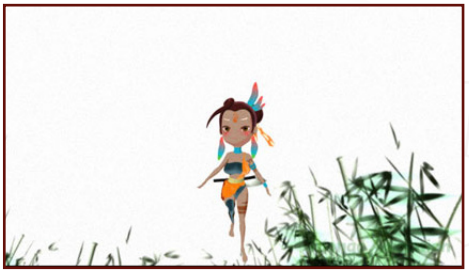






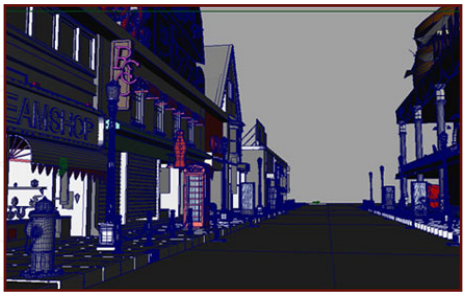




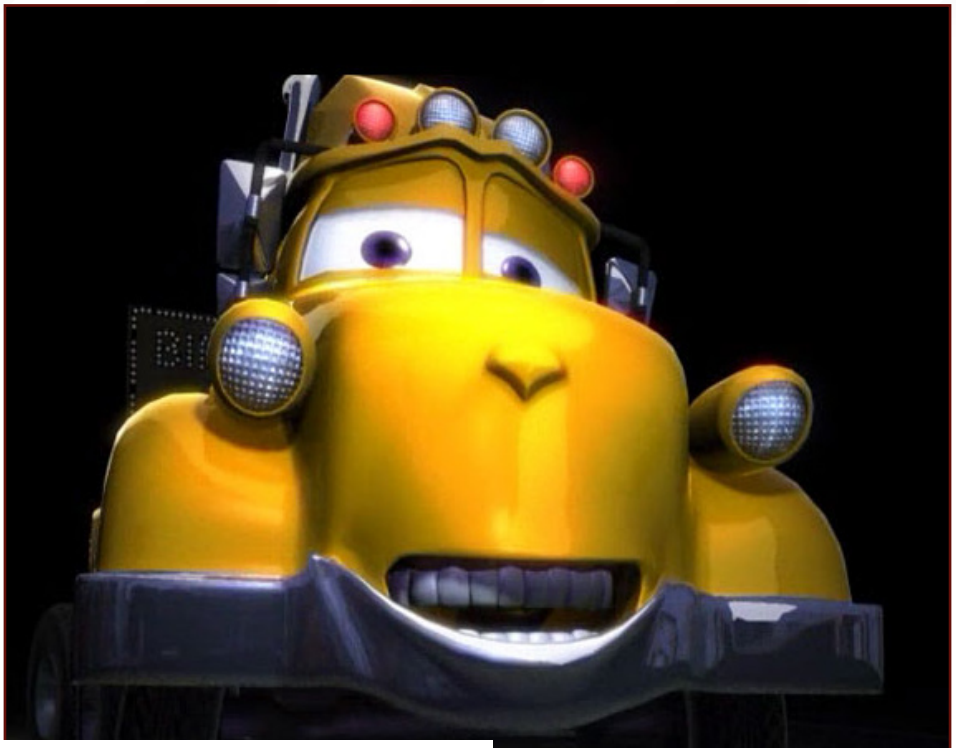


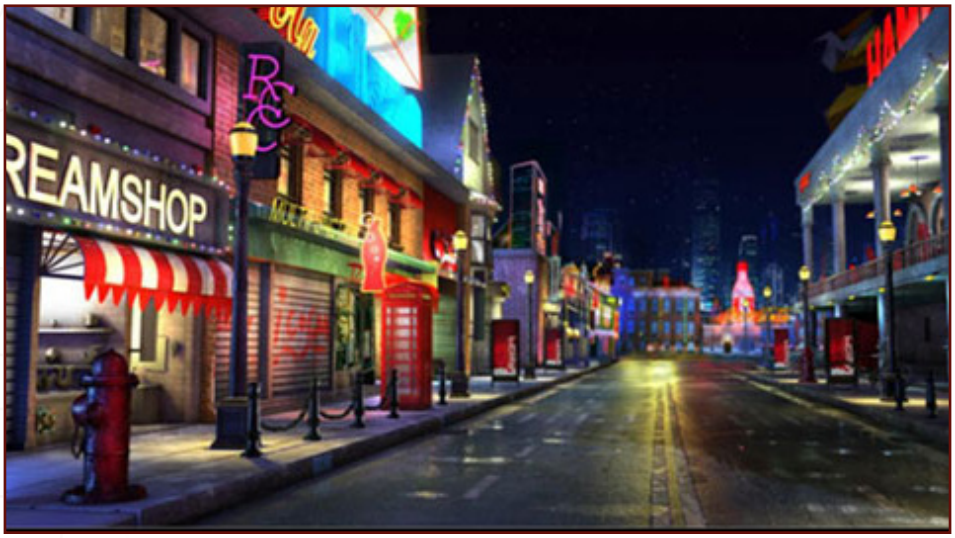
required. They heard from these companies that Bingo had the abilities to execute this project. Although Bingo had just become established, the team members are the best of the best in this field, so we were given this project and delivered it successfully, on time. Finally we received the accreditation from Coca Cola. In April 2006, Bingo formally became the visual products provider for Coca Cola, China. We keep supplying their prime visual products and

provide for their advertisement requirements. Later we will release the Coca Cola TV advert for the traditional Chinese Spring Festival.











Your images have been appearing on the front pages of big CG sites, as well as in many forums. Have you noticed that this additional exposure has helped your business and brought in new work?

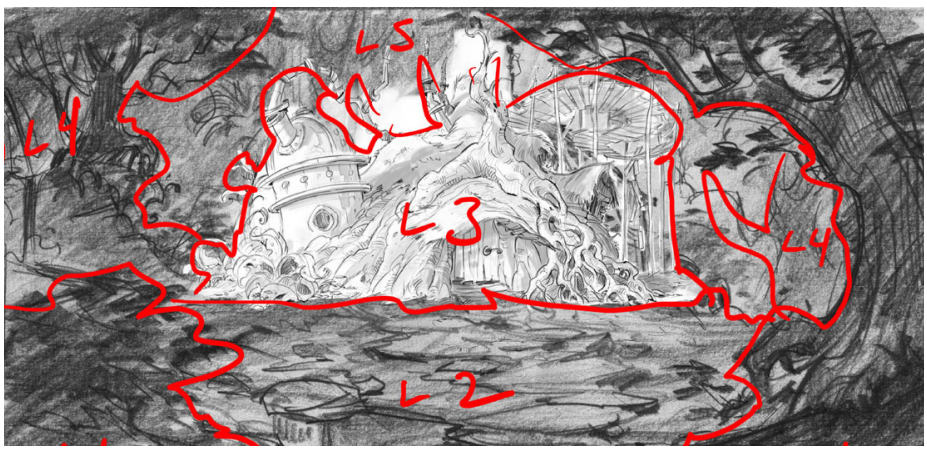
Keeping at the top position in CG websites is quite helpful to our public promotion. It makes Bingo well known across the globe. The most important effect of Bingo is that lots of young CG-ers in China now are dreaming of joining Bingo. In this respect, we also hope to achieve cooperation with other companies to open up new business opportunities.

What advice do you have for young "CG-ers"?

Keep passionate, if the chances are a hundred to one against you, you just need to try harder until you succeed!

What is the CG industry like in China, and what direction is it heading?

CG currently has wide prospects in China. Recently, the central government of China



issued coherent policies to support the domestic game, animation and multi-media industry. We have also gained support from the Shanghai municipal government. With the coming of a new era in the game industry, numerous large-scale game production companies have established their studios in Shanghai, such as EA, UBI, Epic and 2K. China will soon be full

of opportunities in employment and business cooperation in this industry. On the other hand, China is boosting its cultural industry giving potential to many markets. Shanghai, for example, has greatly strengthened its cooperation with the world and issued some preferential policies for its development in financial and business commerce.



That's great to hear, it sounds like the industry is really taking off. What about the educational side of things, are universities and colleges doing their part with suitable new courses?

Lately we are keeping in touch with universities and colleges, trying to find out where their strengths and weaknesses are. We have done a lot of things already for education and maybe in the future, universities and colleges will add our courses too.





Can you tell us about any new projects you are working on now, and what you are aiming to achieve for in Bingo's future?

At the present stage we are producing game tests and cut scene animations for the next generation platforms. These animations mainly focus on the mainstream game engine, such as XBOX 360 and PS3. At the same time we are undertaking an advertising project for Volkswagen and this project will also be finished soon. We have already set-up a CG education centre, in conjunction with Shanghai Multi-Media Industrial Park, with the hope of sharing our experiences with those who want to engage in this industry. Each of the training periods is up to 7 months and the first-stage of the training period has already begun.

BINGO DIGITAL

For more work by this group please visit:
www.bingo-digital.com

Or contact them at:
bingo@bingo-digital.com

Interviewed by: Tom Greenway



totalTextures

v4: r2

Humans & Creatures

The Original Total Texture collection was created in 2001, utilising the best methods and technology of the time. Since then, techniques and technology have both moved forward, and here at 3DTotal we felt that although the original collection is still widely used and highly regarded among artists and studios of all calibers, it was time for an update...

This enormously improved version of the original texture collection now contains 272 individual Materials, comprising of over 938 individual, hand crafted texture maps. Every Texture now has its own unique colour map, bump map. There is also over 50 new alpha and 100 new specular maps.

What's new?
This new collection consists of 272 materials, comprising of 938 individual maps!! (Colour, Bump, Specular and Alpha maps). We have also included 36 psd files for some of the textures, allowing you to customize some new textures of your own.

DVD Contents:
31 Creature Eyes
11 Creature Furs
2 Creature Miscellaneous
6 Creature Scales
14 Creature Skin (Body)
27 Creature Skin (Facial)
16 www.3d.sk images
16 Human Eyes
2 Human Hair
12 Human Misc (Body)
24 Human Misc (Facial)
47 Human Skin (Abnormal)
2 Human Skin (Old)
13 Human Skin (Tatoo)
34 Human Skin (Young)
15 Human Skin (Reference)



15 Collections of amazing Textures

for full information and pricing including discounts of up to 25% visit www.3dtotal.com
Existing v4 owners can get the new upgrade for only $29 usd!

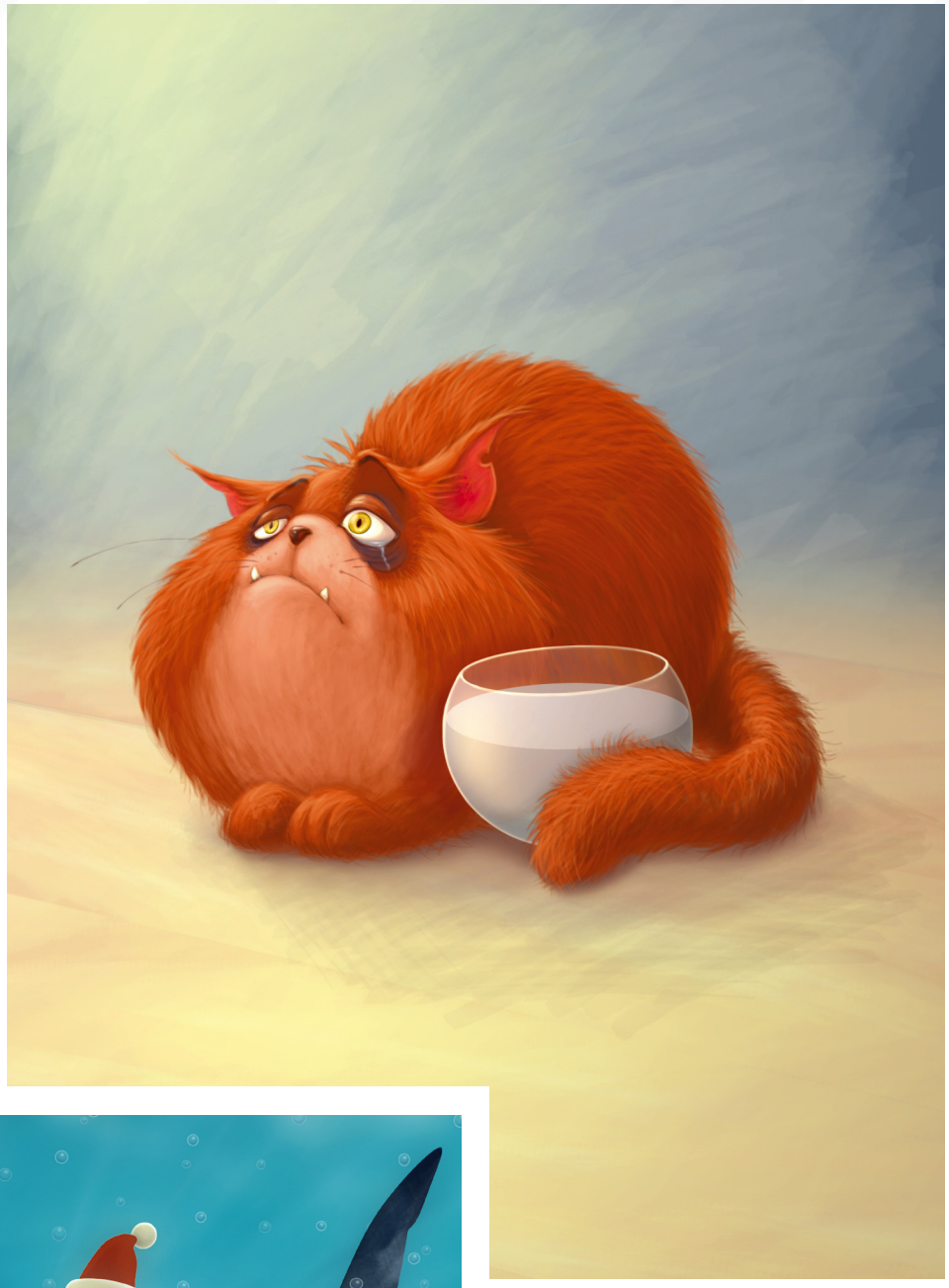
Copyright © Sergio Caires



"First of all, the rabbit does deserve it."

Currently working as a Freelance Illustrator, Michael is skilled in both 2D and 3D disciplines. He talks exclusively to 3DCreative...

Michael van den Bosch



Hi Michael, thanks for talking to us. Please introduce us to your beginnings in CG art…

Hi, my name is Michael van den Bosch. I studied for about two and a half years at the 'Grafisch Lyceum', in Rotterdam. During my traineeship, I was stationed at Hallmark Cards, where I saw all these freelance illustrators bring in their traditionally painted artwork and I realised that this was what I wanted to do. In this traineeship, in 1995, I decided to "drop out", got myself registered and became self-employed, working as a Freelance Illustrator.

A lot of your work has been for commercial purposes. Do you think that your style lends itself well to commercial projects?

Well, I've always been trying to create artwork with a message. I mainly draw art that has a cute and adorable kind of look. Being in the field of greetings cards, I've been told that 80% of the people who buy cards are women. So, to answer your question, I don't know.



You are both 2D and 3D artist, have you found getting work easier having skills in both disciplines?

Yes, 2D will always be the traditional art clients' need, but 3D is all around us nowadays. All the latest animations in theatres, the computer games industry and movies are all 3D. So, when clients see that you do 3D, they will probably contact you sooner.

What are your influences?

Almost every artist out there. I sometimes spend hours searching the Internet, looking for artists that move me with their work. I'm always looking

for inspiration, which doesn't come only from the big names in the industry.

How much research goes into an average piece of artwork for you?

Hard to say, really. The idea usually comes in a split second, but after that the brain never stops storming. OK, there's a period you 'Google' or search for certain things you need to know, for instance how something is constructed, but during the process of sketching, colouring or modelling, the mind always comes up with new ideas to improve the work in progress.

You have a style which I would describe as 'maniac fun' in some of your pieces, such as the 'rabbit strikes back'. Is this a release for you or do you really think that the rabbits deserve revenge?

Good point. First of all, the rabbit does deserve it. Ever seen any compliments or credits given to the magician's rabbit after a performance on









stage, other than some carrots? It's really a release for me, actually. I recently got an e-mail from another artist, who said: "Nice work in your portfolio, especially that new piece called: 'The rabbit strikes back!'. Nothing like your other work. It's like a dark side has come out of you." He was right on the money.

What projects do you have lined up for the future?

I'm busy with my first short animation. The only problem with this is that it's a lot of work to do



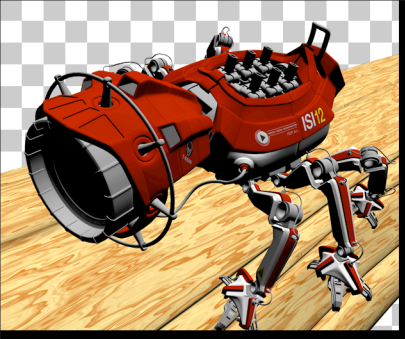
on your own.
So, this could
be a long term
project but hey, you
were talking about the
future, right?

What one piece of advice would
you give to an aspiring artist?
I'm not a wise man, but the advice I'd
like to give, is to do what you do best.

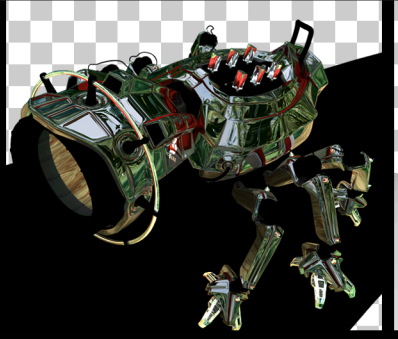
Thanks very much for talking to us, and best of
luck for the future.
It's my pleasure and thank you for this
interview.

Michael van den Bosch

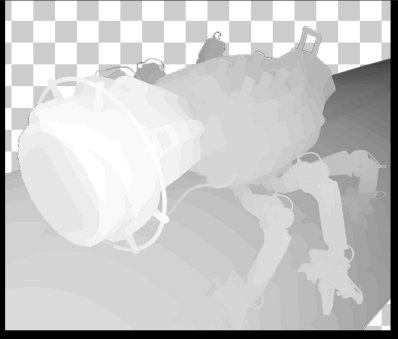
For more work by this artist
please visit:
www.motionchannel.com
Or contact them at:
michael@motionchannel.com
Interviewed by: Ben Barnes



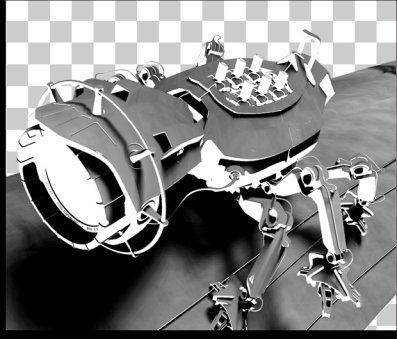
COLOR



REFLECTIONS



DEPTH



SHADOWS

THE POWER OF LAYERS

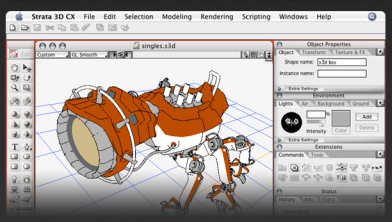


STRATA 3D CX 5.0
DESIGN AT A HIGHER POWER

Digit Magazine (July 2006) says, "Strata 3D™ CX feels like an Adobe® application - graphic designers will feel right at home... The traditional look (of Strata 3D CX) makes the program friendly to new users." Version 5.0 of CX... "makes the program even more like Photoshop's® 3D cousin."

Digit named Strata 3D CX the number one 3D app for designers, and awarded it "Best Buy" in its 3D Design Software Shootout.

SEE FOR YOURSELF!



The 30-Day unlimited tryout of Strata 3D CX 5.0 is now available. Visit our website to find out what users and industry publications have been raving about.

http://www.strata.com/cx5demo/



Visit our website to learn about our entire line of products for designers: Strata 3D CX, Strata Live 3D, and Strata Foto 3D.

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Making 'Those Chairs'

"These Chairs - Dom Där Stolarna" by Daniel Westlund? The 3D animated dance film, which sets six chairs into motion accompanied by a drum solo, was made using 3ds Max. It was aired last month on SVT in Sweden and has been shown at film festivals in Germany, Sweden, Norway and Australia. It won the Leo award at the Braunschweig International Film Festival in Germany this month.

Making 'Those Chairs'



Tell us a bit about yourself. How did you get into 3D? How long have you been doing it? What sort of work have you done in the past and what sort of work do you do now?

I was born in Sweden in 1969. I started studying art in 1987 when I attended The Nordic Art School in Kokkola, Finland. In 1989 I went to The Royal Academy of Fine Arts in Stockholm to study Fine Art; painting in particular. But when I graduated in 1994, I was more into big installations. Once I left school, I couldn't keep doing big things because of the lack of space, so I started to make scale models of exhibitions and photography, and at some point I thought I had more opportunity by going over to 3D. My girlfriend was into 3ds Max at the time, so it wasn't long before I made the move. This was at the time when plug-in renderers started to show up as beta products: Brazil, Finalrender and V-Ray. Without these, I wouldn't have moved into 3D because I was very concerned with the quality and realism of the images and I thought the tools at hand (e.g. Lightscape) were too messy to work with. I've been using 3ds Max since 1999. I like its graphical interface. This has really helped me to learn the more advanced functions of the software. I'm from a strictly artistic background with very little knowledge of advanced maths, so it's really helpful to have things like the reaction controller. It's a way for me to do expressions without any deeper knowledge of arithmetics. I also like the variety of plug-ins, as we now have lots of renderers to hand, for example. My main work has been in looped animations for art galleries. I've also done visualisation work for architects and animations for commercials, but my main income is as a lecturer at "Konstfack University College of Arts, Crafts and Design" in Stockholm, where I teach 3D modelling and animation.

How did the idea for this project come about?

The idea came to me when I was involved in a joint project with a designer and a choreographer. It didn't lead to anything at the time but I kept the idea for some years and I made a short loop of three chairs moving around more randomly two years ago. That piece was shown at some exhibitions and galleries in Sweden. I was asked about showing it on TV but I didn't think it fitted, so I started to think about making a version for TV with more of a start and ending. I also went to dance shows to learn more and found that I really liked it!

How would you describe the completed animation? Does it have a name?

The animation is called "Those Chairs - Dom Där Stolarna". It's not that exiting, but me and my friends referred to it as "those chairs". The title also alludes to resignation, something out of your control, which I think fits the film. My main question when I first had the idea was: how do I make a rigid object come alive? I think the outcome is six very confident chairs showing good teamwork.

How did you create the chairs?

I modelled the chairs using 'Silo Witch', a dedicated sub-division modelling tool. It might have been easier to do them in 3ds Max but I'd just got the software and thought I'd try it out to get to know the tools. After importing the chair into 3ds Max, I set the UV using UV-unwrap and created textures for it in Photoshop. The material consists of several blended V-ray materials with different textures: diffuse, gloss, shiny, etc.

How did you animate them?

I wanted the animation to look "real", or as if there was actually some invisible person tossing them around, so nothing but automated secondary motions would do. I did several tests to animate it using bones and spring controllers but ended up doing it with 'reactor'. Reactor is the tool that I used the most. I love its predictability and stability. All the movement of the chairs is 100% reactor. The animation was done in two steps. Each chair is guided by a single angular dashpot. I started out by animating one chair using x-form. That was the hardest part! I had to key frame every step, but it didn't have to be perfect and there was no second-hand motion. The animation I got from it wasn't that good but I could see the timing and where the chairs were heading. The second step was to take a second chair and bind it to an angular dashpot with the first chair as a guide. Now I got all the secondary animation movements and also some surprises which are inevitable when working on a one-man project like this. I spent a lot of time tweaking the dashpot's strength and dampening so that the final animation was more or less in line with the pre-animated chair's position, as the dashpot was only directing its rotation, not its position.

How did you do the lighting, texturing and shading?

I rendered it all in V-ray, so for the lighting and shading I used V-ray area lights and V-ray materials.

What were the biggest challenges you had to face?

I had to do this project in different periods as other work came in between. Every time I got back to it, I saw something new that I didn't like and needed to change. That was good in many ways, but with the work flow I had with reactor driving all the animation, it was quite a challenge. The 'ease curve' became my best friend. It can't solve everything, but it helped me adjust a lot of timing glitches and it's a great fine tuning tool.

How long did it take to render?

The render time was about 60 minutes a frame, and with a total of 5,000 frames, I realised I couldn't do it without a render farm. I ended up using Respower's flat rate system. I was very happy with it, although it was a lot of money considering this was a totally self-financed project.

What are you most proud of and why?

I'm very pleased with the animation work on the chairs. I wasn't too concerned with the rendering, shaders and lighting. I was quite confident about those parts as I've been doing them a lot. But the animation had to live up to the photo-real quality in the imagery and I had to find a way for it to act naturally, even though it was totally unnatural for them to jump around.

How long did you spend on the project?

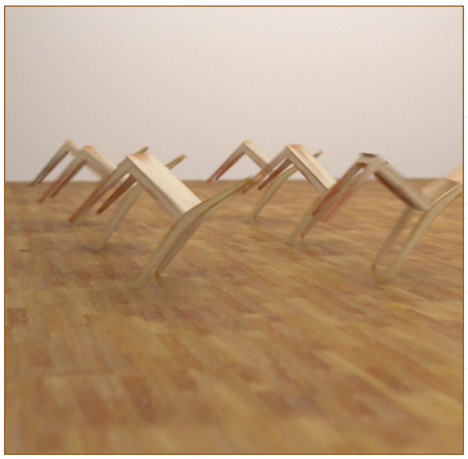
It probably took about 40 days in total, but this was over a period of six months.

Looking back, what would you have done differently?

For the next film I do, I will definitely work more on the naming structure. It's easy to think that it's only six chairs for a short, but in the end you have to do even more work just cleaning your folder tree where you find all sorts of names like "final", "final-final" and "final03". Maybe that's OK if you work on it everyday, but if you go away for a week, it's like hell to start working on the project again! So for the next project, I'll work out a clear structure for naming objects, files, etc. I'll also keep them on printed paper so I don't have to sit in front of the computer all the time when planning, etc.

Where has the film been shown?

I sent it someone at SVT who called me back a few weeks later and said he wanted to buy it. It was shown after a culture show that had a dance theme. It's also been shown at festivals: The Uppsala short film festival in Uppsala, Sweden; The 8th Annual WT OS International Film festival in Norway; The Filmflicks dance



film festival in North Carlton, Australia; The Internationales filmfest Braunschweig - where it won first prize in the "LEO" competition. I hope to show it at more festivals next year, but it's a job in itself to apply to all the festivals by yourself.

What has been the feedback on the finished work?

I've had lots of great feedback from friends and colleagues which means a lot to me. But one thing that struck me once it was aired, was the total silence afterwards. I'm not used to this as most of my work has been for exhibition halls and galleries where you have an opening and get to meet people and see their reactions straight away. So it's really great if I can go to the festivals and be in the audience as they screen the film. The best feedback I got was at the LEO award at the Internationales filmfest Braunschweig this November. To go there and receive the award for something that started with just my own thoughts was very heartening and fills you with great self-confidence.



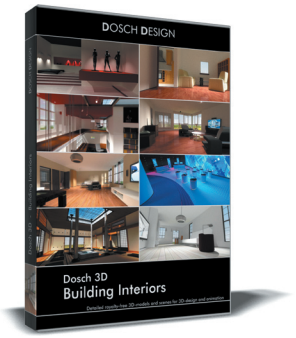
MAKING 'THOSE CHAIRS'

For more information please contact

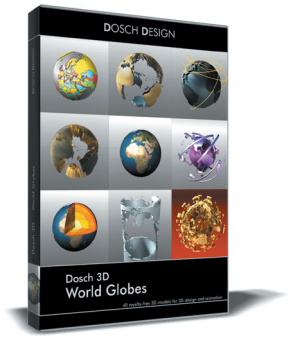
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kimw@rlyl.co.uk
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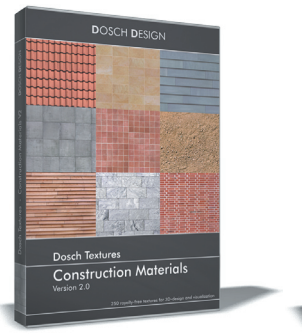
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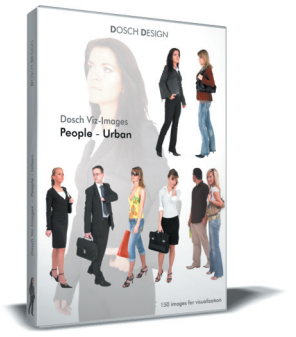
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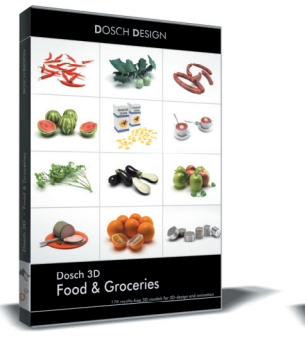
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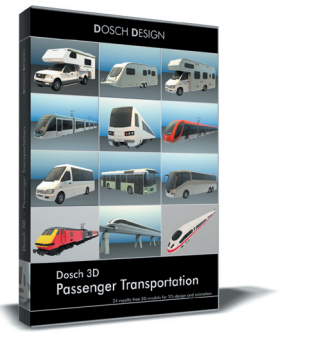
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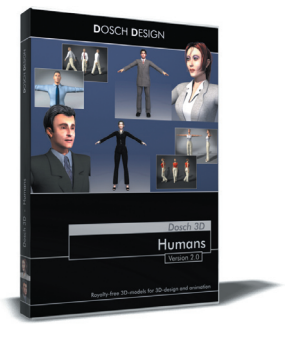
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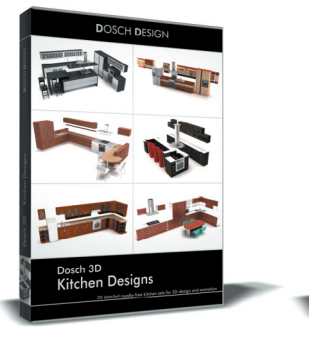
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Dosch 3D:
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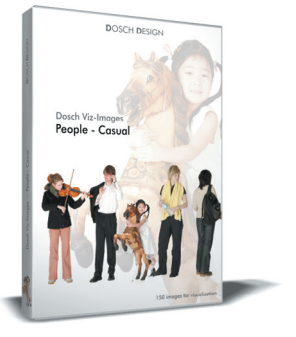
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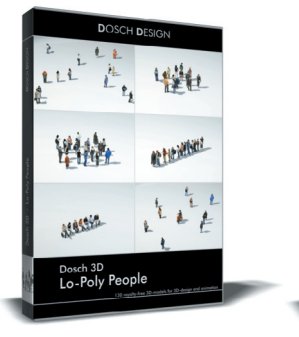
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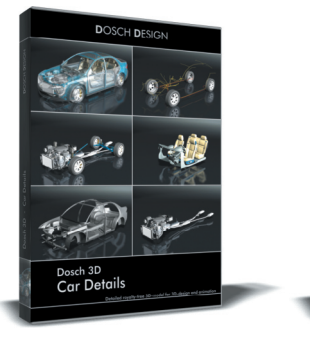
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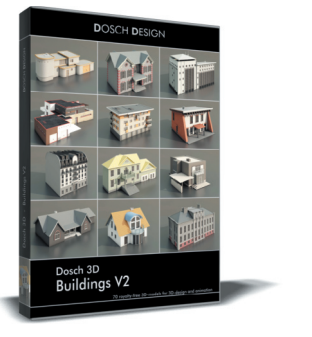
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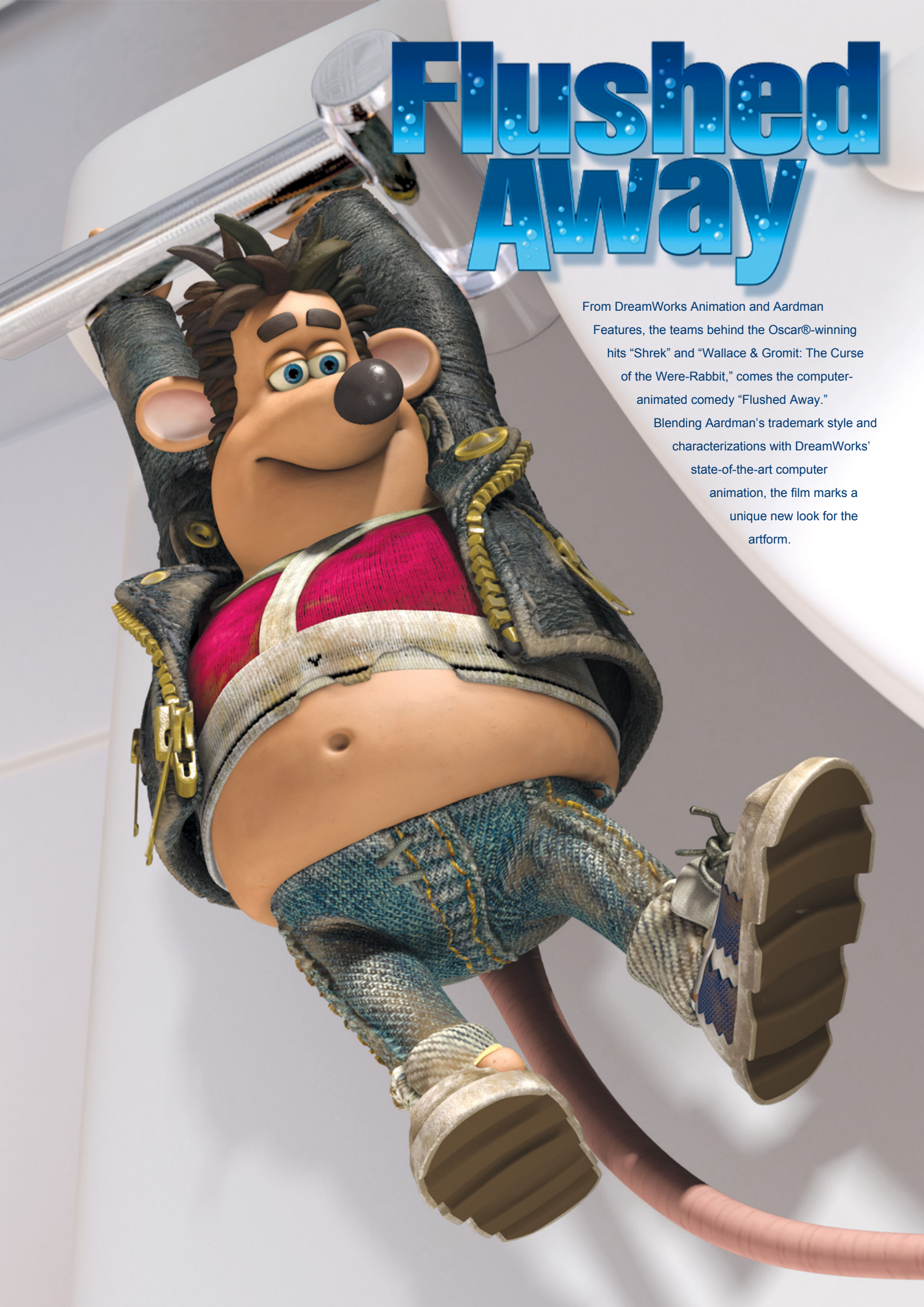
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From DreamWorks Animation and Aardman Features, the teams behind the Oscar®-winning hits “Shrek” and “Wallace & Gromit: The Curse of the Were-Rabbit,” comes the computer-animated comedy “Flushed Away.”

Blending Aardman’s trademark style and characterizations with DreamWorks’ state-of-the-art computer animation, the film marks a unique new look for the artform.



Flushed Away



In this new comedy set on and beneath the streets of London, Roddy St. James (Hugh Jackman) is a pampered pet mouse who thinks he's got it made. But when a sewer rat named Sid (Shane Richie) – the definition of "low life" – comes spewing out of the sink and decides it's his turn to enjoy the lap of luxury, Roddy schemes to rid himself of the pest by luring him into the loo for a dip in the "whirlpool." Roddy's plan backfires when he inadvertently winds up being the one flushed away into the bustling world down below. Underground, Roddy discovers a vast metropolis, where he meets Rita (Kate Winslet), a street-wise rat who is on a mission of her own. If Roddy is going to get home, he and Rita will need to escape the clutches of the villainous Toad (Ian McKellen), who royally despises all rodents and has dispatched two hapless henchrats, Spike (Andy Serkis) and Whitey (Bill Nighy), as well as his cousin – that dreaded mercenary, Le Frog (Jean Reno) – to see that Roddy and Rita are iced… literally. The film is directed by David Bowers and Sam Fell with story by Sam Fell and Peter Lord and Dick Clement & Ian La Frenais and screenplay by Dick Clement & Ian La Frenais and Chris Lloyd & Joe Keenan and Will Davies. Produced by Cecil Kramer,









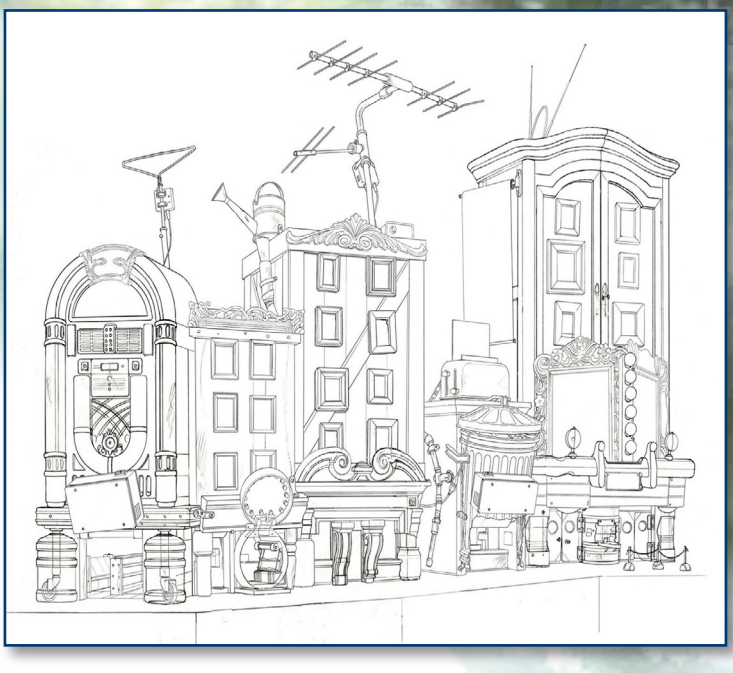


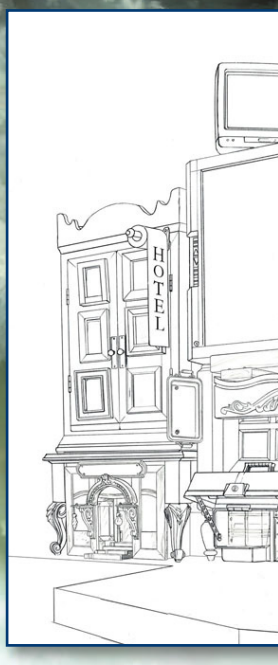


Peter Lord and David Sproxton and co-produced by Maryann Garger. "Flushed Away" stars the voices of Tony Award winner Hugh Jackman (Broadway's "The Boy From Oz," the "X-Men" film franchise) as Roddy; four-time Oscar® nominee Kate Winslet ("Eternal Sunshine of the Spotless Mind," "Iris," "Titanic," "Sense and Sensibility") as Rita; two-time Oscar® nominee Ian McKellen ("The Lord of the Rings: The Fellowship of the Ring," "Gods and Monsters") as The Toad; Jean Reno ("The Da Vinci Code," "The Tiger and the Snow") as Le Frog; Bill Nighy ("Pirates of the Caribbean: Dead Man's Chest," "Love Actually") and Andy Serkis ("King Kong," "The Lord of the Rings: The Return of the King") as Spike and Whitey; and Shane Richie ("Shoreditch") as Sid.DreamWorks Animation S.K.G. and Aardman Features present "Flushed Away," which is being distributed by Paramount Pictures.

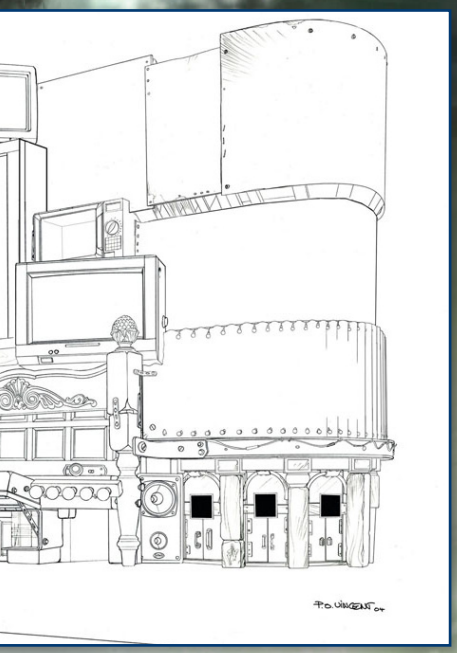
Plumbing Together

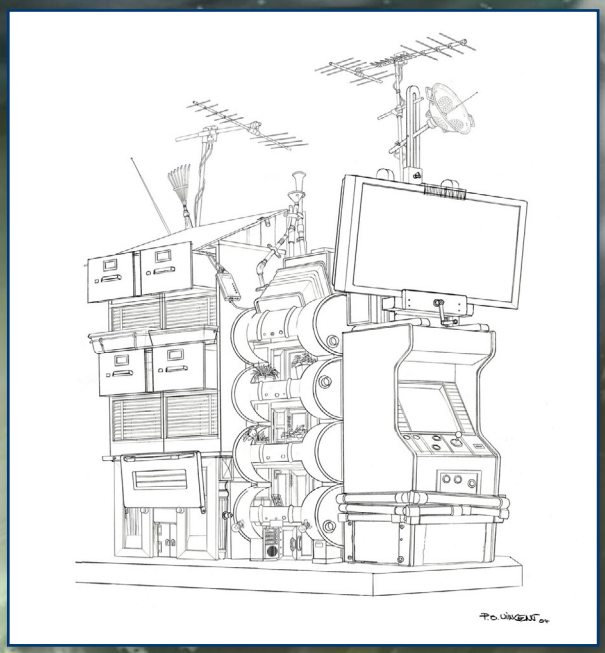
After achieving success with the critically acclaimed box-office hit “Chicken Run” and the Academy Award®-winning “Wallace & Gromit: The Curse of the Were-Rabbit,” DreamWorks Animation and Aardman Features team up for the third time with “Flushed Away.” For this film, the two studios took their collaboration to a new level: after being conceived at Aardman’s UK studio, “Flushed Away” became the company’s first computer-animated film and was produced entirely at DreamWorks’ animation studio in Glendale, California. According to director David Bowers, the movie reflects the best of what each studio has to offer. “We have Aardman’s charm and rich sensibilities, and





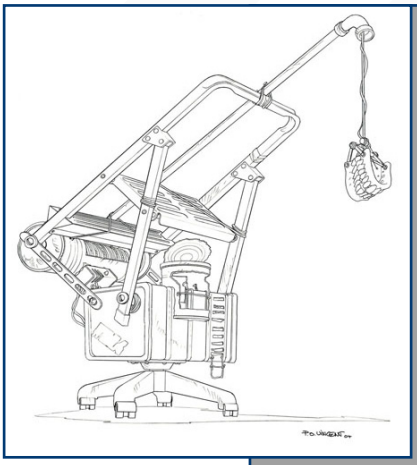




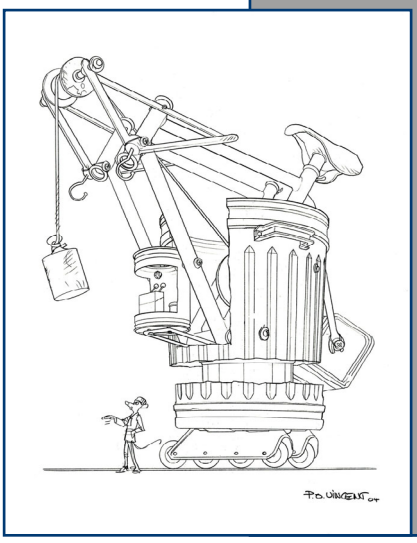


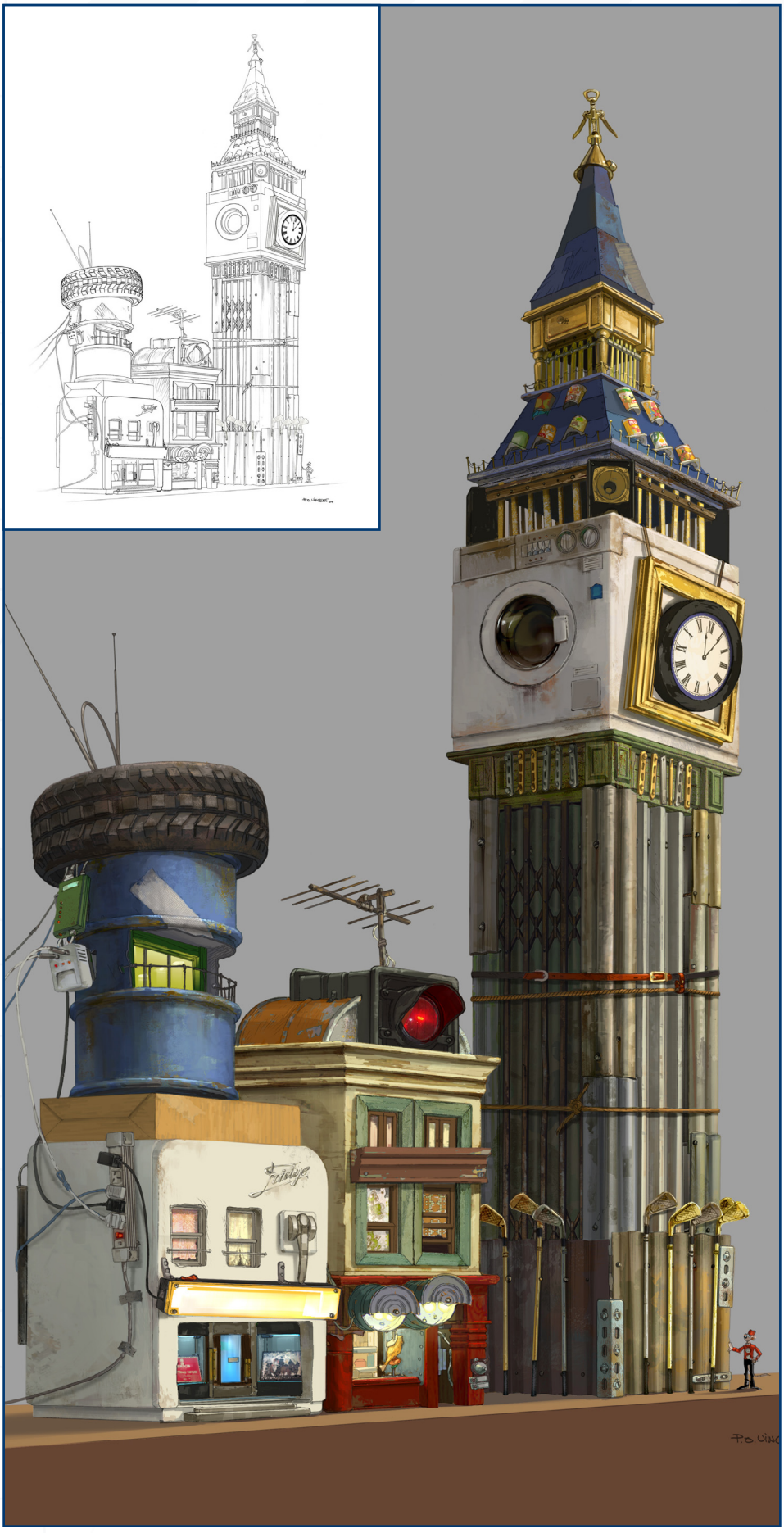


all the imagination and technological capabilities of DreamWorks," Bowers attests. "I don't think the movie could have happened without either studio." As "Flushed Away" was in its early stages of development, the filmmakers realized their third collaboration would need to be entirely computer-animated for several reasons. Water is notoriously difficult to recreate in stop-motion, and the sets would have to be enormous to be in proportion with Roddy, Rita, and the rest of the "Flushed Away" characters. According to director Sam Fell, Aardman had been looking to make a CG animated film for some time, and "Flushed Away" seemed to be the right project to make the jump. "We wanted to create a whole city, a whole world, and populate it with thousands of little rats walking around along canals instead of streets," says Fell. "With water, crowds, big scope, many sets – it seemed like CGI could really help us make that happen." Bowers agrees. "The Kensington apartment, where the movie begins, would have had to have been full size," he says. "There just wouldn't have been room in the studio to do it. And there wouldn't have been enough plasticine or clay in the world to do it." "At first, we thought we would do a stop-frame film with a lot of CG enhancements," says Aardman co-founder and producer David Sproxton. "But when we looked at how much we would be doing on the computer – the extensive tunnels, the large sets, the water – we thought, 'Why not make the









whole thing in CG?'" In addition to the scaling challenges, the myriad water effects – critical components to a story set largely within a sewer world – provided an even more convincing case for CG. From Roddy's titular tumble into the toilet's whirlpool to the frenetic boat chase leading up to the film's climax, water would need to be as versatile as the characters themselves. Aardman co-founder and producer Peter Lord explains, "Water is practically a character in this film, and it's just the hardest thing to do in stop-frame animation," he says. "When we do water, it's normally little bits of cling film making a splash, or animating drips of glycerin trickling down the damp character. To have a boat bobbing about on a stream or tearing along at a super speed, through a river, chased by villains on egg whisks – it would have been impossible." Head of effects Yancy Lindquist comments, "We have flushing water. We have water running down pipes. We have frozen masses of water. Each of those requires a slightly different technique." Like the directors, Lord says that "Flushed Away" remains a film that could only have been made by a collaboration between Aardman and DreamWorks. "I think 'Flushed Away' brings a stillness to the CG art form," Lord says. "We believe in performance above all; the audience needs to believe in the characters. That often means watching what happens on the face when the character is almost still. That subtlety is what we do best. On the other hand, computer animation is great for big action. By putting the two together, we've got strong, believable characters and some truly spectacular action sequences."Visual effects supervisor Wendy Rogers expands on the idea of stillness: "We really have treated the characters as though they were puppets, and they're animated to move that way," she says. "We don't have any dynamic simulation on the hair. Their clothing doesn't flow when they walk. They're hitting that pose and holding it rather than sort of easing through a motion." While the film is set primarily in a fanciful underground world, the real life lessons are unmistakable. Thrust together in their efforts – first to escape

The Toad, then to put a stop to his dastardly plan – Roddy and Rita learn to rely on each other. "More than anything else, Rita wants to help her family," producer Cecil Kramer says. "But she needs to learn that she can't do that alone. When she opens herself up to accepting Roddy's help, anything is possible. And Roddy's journey is universal. You can have all the toys in the world, but they're not worth much if you have no one to share them with. At the end of the day, we all need friends and families to connect, even the finest possessions pale in comparison to our relationships with others."

Dual Diligence

From the characters themselves to the sets and backgrounds, Aardman films have a distinct look and feel – a style the filmmakers wanted to continue in "Flushed Away." Because stop-motion technique itself is so integral to that style, bringing the Aardman look to CG required unique character design, careful attention to detail, and ultimately, a little restraint. The filmmakers knew they wanted to retain the patent Aardman characterizations in CG, but they were also determined to avoid direct replication of the clay figures into computer models. In combining the advantages of computer animation with the corporeal quality of stop-motion, they created something new – an evolution of the Aardman style. "There's definitely a look to the design of an Aardman stop-motion film," asserts Sproxton. "There's a texture that's inherent in model work – the fingerprints on the clay, the wood grain, the plaster, the paint. You get a lot of texture simply because the sets and characters are constructed from real materials. That look is distinctly Aardman. I would say it's our trademark." "We worked hard to translate the stop-frame style into the computer animated technique," Fell states. "We wanted to use the CG technique to capture the signature Aardman warmth, charm, and tactile feel. It's the best of both worlds, really." In a stop-motion film, Aardman artists create plasticine models with metal armatures. Stop-motion animators









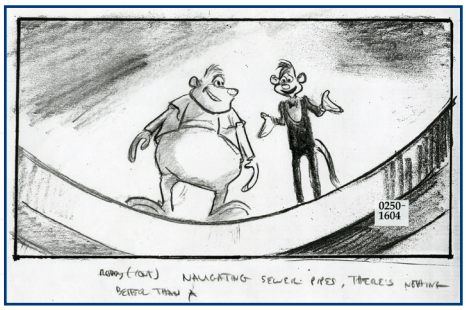
















pose the characters' bodies and sculpt their faces frame by frame. As a result of this painstaking process, the characters hit poses very quickly and communicate largely through facial expressions. As Jeff Newitt, head of character animation, explains, the creators of "Flushed Away" found themselves freed by the new boundaries of CG, but constantly kept in mind the goal of matching the Aardman style. "The stop-motion armatures are restricted by gravity, and the weight of the clay or rubber or foam used in building the puppets," Newitt says. "So when you animate them, you're actually trying to achieve a kind of innovation through limitation most of the time, and a natural style has evolved. Since you don't have those impediments in CG, animators actually have to use a lot of restraint to preserve it." Melding the two animation styles was a trial-and-error exercise in the character rigging stage of production. During this phase, fully modeled and rigged characters are created in the computer based on the art department's designs and specifications, as well as the needs of the animation team. Some of the benefits of working in CG were immediately apparent. "Consider The Toad," offers Newitt. "You have a massive bell-shaped body with very spindly legs. There's so much weight to support and almost nothing to carry it. A character like that is an absolute nightmare to produce in stop-motion, but in CG, you don't have to worry about gravity." Of course, there were also challenges during this translation process. "When we started doing the rigs, they matched the Aardman puppets almost exactly," says lead character technical director Martin Costello. "But we found that some of the movements really didn't work well in computer animation. So they evolved into something new, though there are still many similarities with traditional Aardman puppets, particularly the mouths and the brows." In traditional stop-motion, animators use a variety of mouth pieces for each character. These pieces are removed and replaced with different shapes in nearly every frame which allow the animators to



not only make their characters speak but also create different expressions. To recreate this look in CG, the rigging department generated those replacement shapes within the computer. "In stop-motion, they physically remove one mouth shape and put in another in nearly every frame," Costello notes. "So we made sure we could do the same thing on the computer."

One of the most difficult components of the CG facial rig was the trademark Aardman monobrow. On a clay figure, the monobrow is a piece of plasticine that hangs above the eyes, small plastic spheres which are pushed into the brows to form sockets. The brow is then raised slightly to form two furrows above the eyeballs. Costello cites Gromit – the silent canine partner of Aardman's Wallace and Gromit franchise – as the best example of the brow's importance. "Gromit doesn't speak; he basically does all his acting with his brow. It's very subtle and it's a real mark of Aardman animation. So we had to mimic that in 'Flushed Away.'" It took months to develop a CG rig that captured the right level of expressiveness. The monobrow rig had to reflect the clay-like feel of the character's brow. Controls were added to the eye sockets to form a ridge, a sort of "false-brow" upon which the protruding brow would rest. Other controls were added to flatten and fatten the brow. Frown lines were added as scalable displacement maps to imitate the scoring of clay by modelling tools. "Aardman animators move the characters' faces by hand," Costello says. "Their fingers can make the smallest changes to reflect a character's emotions or thoughts. The computer controls had to give our animators that same ability, because obviously we can't just give the computer a giant thumb." Thumb or no thumb, the Aardman thumbprints are all



over the characters of Flushed Away – literally and figuratively. When Spike receives an electric shock, the skeleton that shows through is actually a stop-frame armature. And if you look closely enough, Bowers shares, "you'll see in some rare spots, some of the characters even have a few thumbprints on them."

Team Players

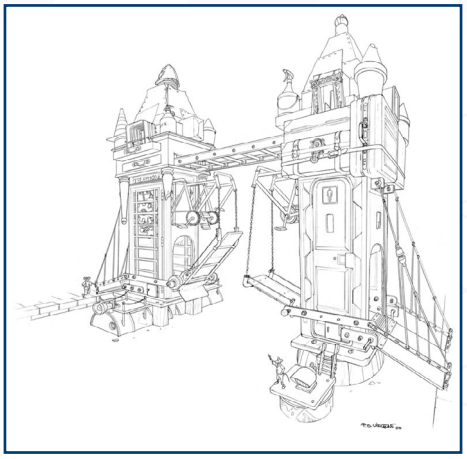
No man – or mouse – is an island. Behind each of the memorable personalities gracing the screen in "Flushed Away," there was a team of talented artists, animators, and actors working together to bring that character to life. "'Flushed Away' has some great comic characters," Lord continues. "I think the villains in particular tend to steal the show a bit. We've taken great pains to try and get real performances and a story that people really care about. And it is a strong, exciting story, with lots of very big laughs."

"Our hero, Roddy St. James, is a privileged society mouse living a spoiled but solitary life in Kensington, an upscale London neighborhood," Bowers reveals. "He thinks he has a wonderful life that involves a lot of play and very little responsibility. But he doesn't have any family or real friends, so he has to make do with the toys and bits and pieces around the apartment."

"He doesn't really know much about the world," Fell adds. "He lives in this bubble – albeit, a very beautiful and luxurious bubble – but he's quite naïve." When he takes an unanticipated tumble into London's sewer city, Roddy is faced with a world completely different from his own. It is immediately clear that this inadvertent adventure will be an eye-opening one.

Hugh Jackman, who gives voice to Roddy, explains his character's shock at his sudden change in circumstance. "When Roddy is

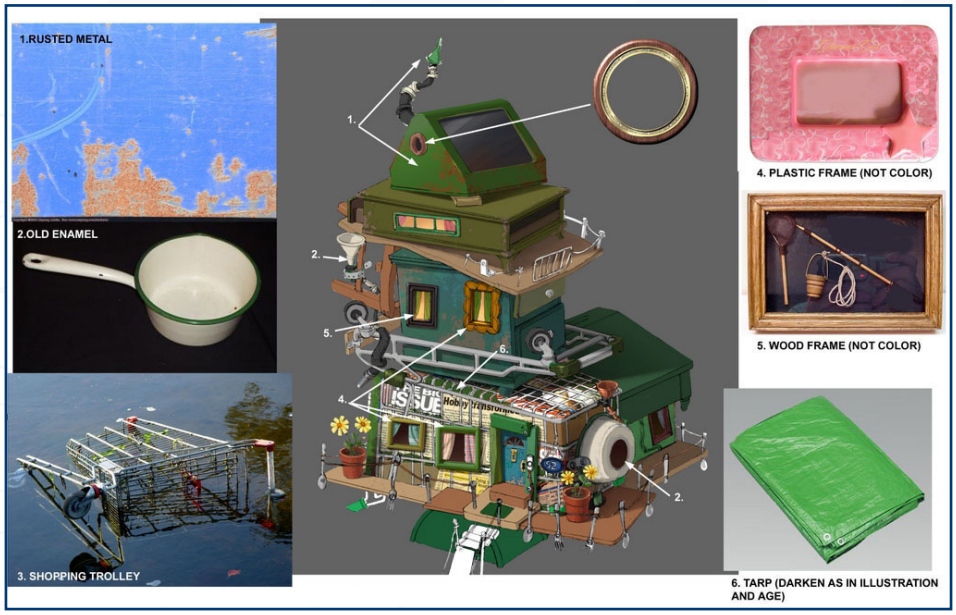


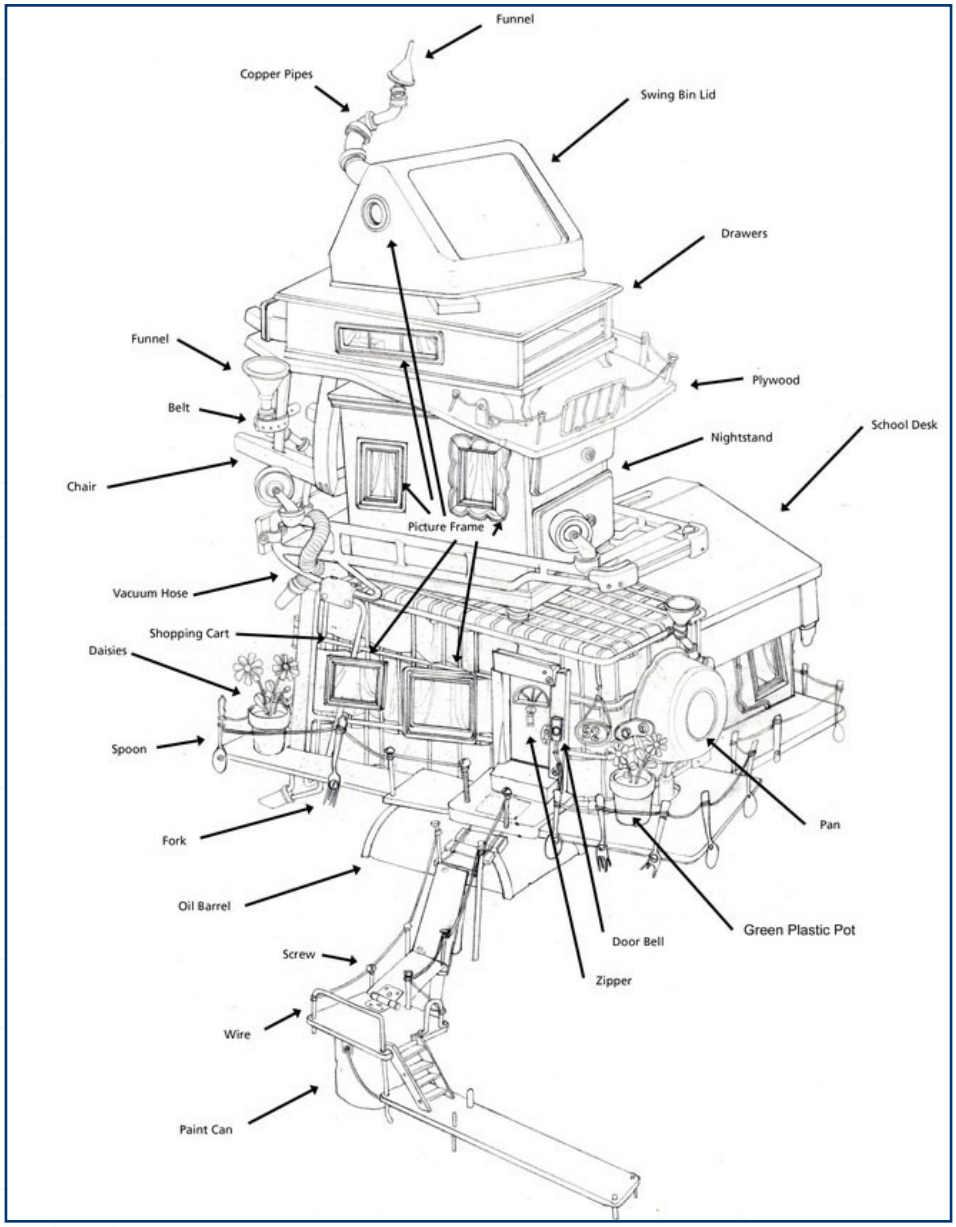




flushed down the loo, it's not just like being a fish out of water – it's like being on Mars. He has never been outside his house before; he's always well-dressed, always clean, and always alone. All of a sudden, he's not only in a new world, he has to fend for himself among hordes of strangers." "Hugh made Roddy even more charming than we thought he could be," Bowers says. "Hugh is obviously a very talented dramatic actor, but he's also got a lovely light comedy touch. Roddy became much more fun, really a nicer guy, when Hugh got involved. And he could sing! We didn't expect that, but once we heard him, we knew we had to find a way for Roddy to sing in the movie." Jackman, who won the Tony Award for Best Actor in a Musical in 2004 for his portrayal of singer-songwriter Peter Allen in "The Boy from Oz," admits, "I've done a little bit of singing. When we first started working, Sam and David said, 'We have an idea for a scene where Rita kicks you off out of the boat. You're on a raft made from a rubber duck, and she throws you a guitar to use as a paddle. But instead, you use it to charm her by singing a song.' We made it up on the spot."

Rita – played by Kate Winslet – is everything that Roddy isn't. She's an independent, street-smart skipper who lives in the moment and takes risks, but is also determined to support her enormous family. Roddy and Rita find themselves thrown together for the adventure of a lifetime. "Roddy's given a tip that Rita is the only one brave enough to take him on the dangerous journey back to his home," Winslet explains. "And the two of them develop an





unlikely friendship that sort of turns into an even more unlikely romance. It's certainly a case of opposites attracting." Fell adds, "Rita and her dad make a living as scrap dealers on this boat called the Jammy Dodger. She's a bit wild, a little bit chaotic, a little vulgar – she's got some rough edges. But she's also brave and adventurous. So she might get into some trouble, but she always manages to get herself out of it." "We thought of her as a sort of 'Indiana Joanna,'" says Kramer. "Rita is really the quintessential street girl," says Simon Otto, the supervising animator who developed Rita's look. "At first, we created a character that was attractive, but extremely tomboyish. Red-haired, scrappy, a bit disheveled. Kate added a feminine nuance in her voice work, and I think Rita really ends up as something of a cross between a beautiful siren and a construction worker." Winslet identifies with her character. "I think I am something like Rita – every girl should be. Tough, exciting, and interesting. I try to be as strong as I can be. I think that's a very important quality for us girls to have." If Rita is unrefined, Sid – Roddy and Rita's unknowing matchmaker – is downright uncouth. After a burst sewer main rockets him up the pristine kitchen sink, Sid, a crass but jovial sewer rat, sets up residence in Roddy's Kensington flat. Rather than be evicted from his plush new surroundings, Sid flushes away his displaced host. Adorned in a T-shirt made from underpants and trousers that can't contain his sizeable belly, Sid punctuates his first scene in the movie with the longest belch in the history of animation. "Sid is filthy and unrestrained, and though he's really not an evil guy at all, he's a threat to Roddy's way of life," Fell states. "Sid has led a fairly tough life in the sewer, and has no desire to leave this luxurious place. He's a dirty, energetic character who has invaded Roddy's clean little bubble. Sid is chaos, and Roddy doesn't like chaos." British star Shane Richie provided Sid's voice – and more. "Sid's flamboyant and a bit odd, so Sam and David let me ad lib quite a bit," Richie says. "So people who know me will

likely say, 'Oh well, Shane's added that bit.' I certainly threw a bit of my personality in there." Lionel Gallat, the supervising animator responsible for bringing Sid to life, noted that Sid's girth was a challenge for the crew. "Sid is fat," Gallat asserts. "It's difficult for our riggers to give a portly character good definition. And sometimes their size restricts movement, which means that they have to create a lot of controls to shape different kinds of physical actions. Sid's belly could have gotten in the way when he's looking down into the toilet bowl, for example. But the riggers did such a good job with him." While Sid happily adjusts to his lavish accommodations, trouble is brewing for the rodents down below; the comically sinister Toad is plotting their widespread demise. "The Toad is a big, bombastic, overbearing, huge, green monster," says Bowers. "He used to be Prince Charles' pet, but he was replaced by a mouse and flushed down the royal toilet into the London sewers. So he harbors a deep-seated resentment towards all rodents, and it's his plan to wipe them all out." The Toad is voiced by Ian McKellen. Bowers adds, "We asked him to bring all of his Shakespearean pomp to the role, because The Toad sees himself as sort of a sophisticated, suave, Noel Coward-type… even though everyone else sees him as Jabba the Hut." "I never think of the characters I play as unpleasant, even if they're Richard III," says McKellen, sympathetically. "Toad's had a hard life. He got flushed down the loo when Prince Charles handed over his favors to a new pet. Of course, Toad was disappointed, to put it mildly, but down below, he came into his own. He's sentimental about his past, but he was turned by fate and he has a very strong nasty side as well."

"Toad is very baroque and broad in his gestures, and very fun to work with," says supervising animator Jason Spencer-Galsworthy, who led the team that animated The Toad. "He's the villain of the film, and the villain is often the character that has the most interesting nuances. There's a perception that if you're big, you're also slow and lumbering, and we didn't



want Toad to be like that. To get an idea of how he should move, we looked at videos of larger icons – Noel Coward, Alfred Hitchcock, to name two – who are also quick and powerful, who have incredible energy. You feel like he can be a real physical threat at any moment, even though he usually relies on his henchrats to do his dirty work." Spike and Whitey are the Toad's chief henchrats, tasked with retrieving the Toad's secret weapon from Roddy and Rita. Much to their ruthless employer's chagrin, this twosome is low on talent, brains, and killer instinct. They are, according to Fell, "really just a couple of idiots. They really want to be bad guys, but they're just not any good at being bad." Andy Serkis, who voices Spike, adds, "Spike and Whitey are a double act. Spike is lethal, absolutely lethal… in his own mind. He's actually soft as anything, and kind of a nervous, twitchy rat who still lives with his mum. And he compensates by bossing around Whitey, who is three times his size."

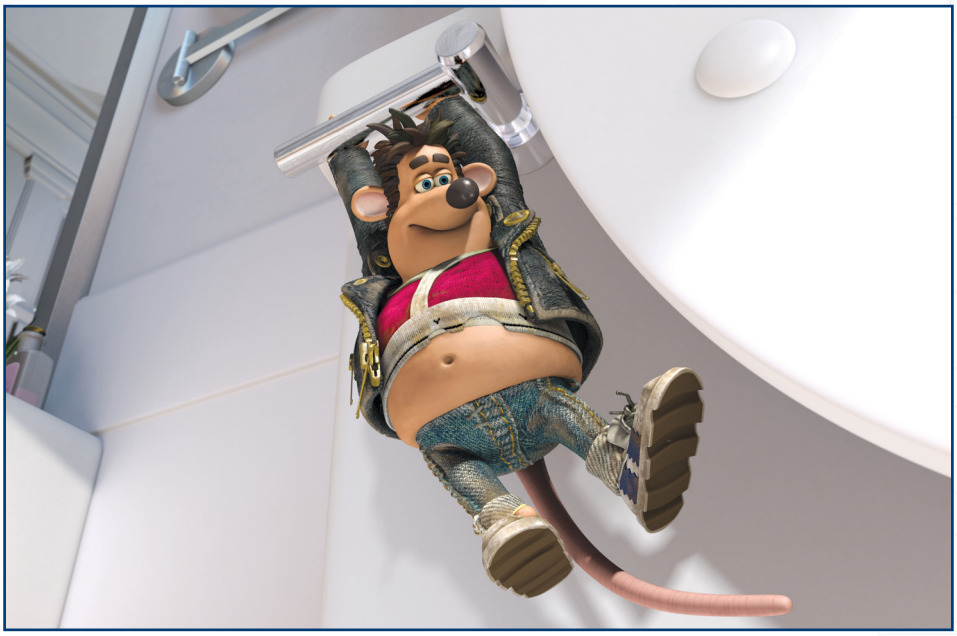
"Whitey is an albino ex-laboratory rat," explains Bill Nighy, who provides Whitey's voice. "He was involved in some quite sophisticated shampoo experiments involving overexposure to hallucinogenics, which may well have contributed to his lacking intellect. He's a big lumping character who is really a perfectly nice chap with a difficult job." Producer Cecil Kramer adds, "I have a soft spot in my heart for Whitey. He's rough and tough on the outside, but on the inside, he's a complete mush." Serkis found the process rewarding. "You inhabit the character and you play the situation," he says. "I was fortunate in that the first section I did, Bill and I got to work together. That was such a relief, because if you're doing a double act, you have to be able to play off the other person." Nighy concurs, "The phenomenon of

hearing your voice coming from this animated creature is thrilling." When it becomes obvious that neither Spike nor Whitey can keep up with Rita and Roddy, The Toad calls up his ruthless and rubbery French cousin, Le Frog. A rather snooty mercenary, Le Frog is more passionate about having time for a leisurely dinner than he is about his cousin's maniacal plan. French actor Jean Reno provides the voice of Le Frog. "He is the archetype of a bad guy more than a French archetype," Reno describes. "He's got some stereotypical French traits – his relationship with food, with girls – but there's also the very smooth villain. He's colorful, and I like that." Bowers admires Reno's sense of humor as much as his talent. "Jean was a real trooper," he chuckles. "You know, the Brits and the French have poked fun at each other over the last, oh, five million years. We make fun of the Brits too, of course, but even so, there were certainly a few little gags that we sort of worried about handing over to such a respected French actor. But Jean didn't mind in the least."

Le Frog's distinct form dictated his range of motion. "He's shaped a bit like an M&M, which can be tricky to animate," says Mark A. Williams, the supervising animator who oversaw many of the key Le Frog scenes. "You can't really rotate the spine and neck joints. So basically, you rotate him from the hips and give him very stretchy arms and legs. The way he moves actually adds to his humor." Cecil Kramer reflects on the ensemble. "We never had all of our actors in the room at the same time," she offers. "In fact, we recorded across ten cities, six countries, and three continents. But because we had just the right combination of talent – the right people in the right roles – the characters came together perfectly."

From "Up Top" To Bottom

To emphasize the contrast between Roddy's life of lonely luxury and the vibrant chaos he discovers when he's flushed from it, the filmmakers were determined to design two dramatically different worlds. Their efforts















resulted in the wild subterranean setting of Roddy's tremendous adventure – the polar opposite of his polished, impersonal "Up Top" flat. Everything is in perfect order in Roddy's extravagant home, and when his owners are away on holiday, Roddy has the run of the place. Fell explains, "Roddy is the pet mouse of a rather wealthy family living in Kensington. He lives in this gorgeous, gilded cage, is dressed in the finest doll clothes available, goes skiing on little mountains of ice cream. He plays volleyball with his toy pals and drives them around in his toy sports car. And he's really quite happy there – or rather, just assumes he is because he doesn't know anything different."

Since the film is set in and underneath London, one of the first steps in the production design process was a trip to the Square Mile itself. "We took so many photos," remarks co-art director Pierre-Olivier Vincent. "We captured every little detail – the windows, the doors, the stairs, the signage – because things like these are very unique to a city. We really tried to absorb the mood of the city." While the idea of the city often evokes images of rain and gloom, Vincent noted that London was practically awash in bright hues. "We think of London as a very dark city because the weather is often overcast, but it's actually very colorful. There are a lot of reds, a lot of whites. Most of the windows have that white framing. The doors are often bright blue or green or red. Even the bricks are a very distinct color." In the film, matte paintings provide the backdrop for above-ground London. "We started out with the photographs of the real place," says Ronn Brown, matte painting supervisor. "Once we have those photographs, it's kind of like making a collage. When we're painting, we're essentially putting all those photographs together, adding in the light, the values, and the shape. The goal is to be realistic within the style of the film – sort of 'realistic with a twist,' always adhering to that Aardman style. With Big Ben, for example, we've kind of exaggerated the shape of the building to give it more of that sculptural Aardman look."

Underneath Kensington, the vibe and pace



are quite different. It's a bustling, unruly place, and for a pampered pet accustomed to order and predictability, it is simultaneously terrifying and exciting. Roddy's home is clean, comfortable, and safe – but it is also somewhat cold and uninspiring. The underground world, conversely, needed to be almost magical. "There had to be a little bit of coldness in Roddy's world because we needed him to eventually become attached to the world down below," explains co-art director Scott Wills. "So he goes from a world that is really white and pristine into something darker and more complex. But it's a balancing act – Roddy has to find the world overwhelming and intimidating at first, but it can't be too scary and off-putting either, because he has to fall in love with it." To draw inspiration for this world, the filmmakers visited an area of London that can hardly be considered a typical tourist attraction. "We took a field trip down into London's sewers," Bowers shares. "We got all kitted out in Hazmat suits and protective masks and had to climb down a 50-foot ladder." The excursion revealed a less-than-picturesque environment. "There was nothing down there," Bowers laughs. "We were expecting to be very inspired by what we saw, and while it really was impressively expansive, it was quite empty. We asked one of the men who worked down there where the rats were. He said, 'Oh, it's too deep for rats. No rats down here.' So that was a bit of a surprise." But the trip did reveal surprisingly beautiful Victorian architecture and brickwork, which production designer David A.S. James was sure to capture on camera. "I took a lot of digital stills down there," he recalls, "even though there was a guy behind us warning us not to use too much flash because it could possibly trigger a methane explosion. Not exactly your typical workday in CG animation." Once they were back in a less incendiary environment, the team began designing an alternate vision of London itself for the sewer world. While the mood and pace differ considerably from "Up Top," the city's influences are obvious in this underground metropolis; the designers reconstructed London's notable landmarks with discarded items from the world above. In the alternate Piccadilly Circus, an old jukebox serves as a record store and a discarded arcade machine functions as an arcade. The subterranean Big Ben is comprised of a washing machine, a picture frame, a wall clock, and cups. The



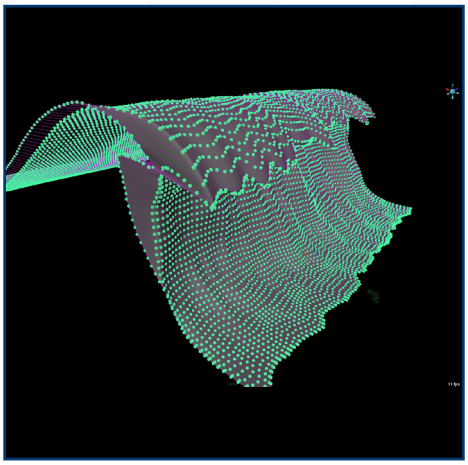


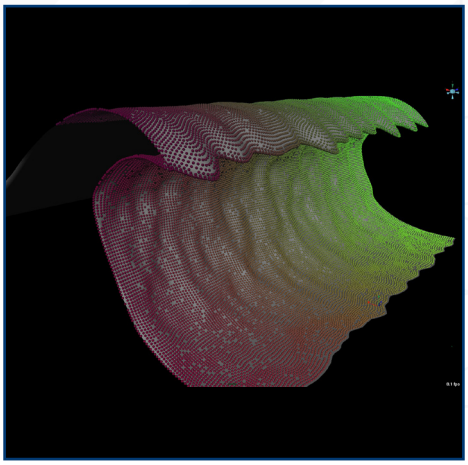
London taxi is a converted boot, and the newsstand is a repurposed motorcycle helmet. Visual effects supervisor Wendy Rogers notes that to build the complicated and visually stunning world beneath the streets of London, the artists referenced an early were assisted physical set built by the team at Aardman and attempted to replicate that look in the computer. “It really was a design challenge, and I think that’s where Aardman really lent a hand. They gave one of their set builders a pile of garbage and said, ‘Go build an underworld.’ It’s really fun – every time you look at the movie, you’re going to find something different in the set.” The Jammy Dodger – Rita’s boat – is one of the team’s most inventive creations. “The boat has quite a bit of screen time,” James continues. “So we knew it had to be very interesting to look at. There are tennis balls for the bumpers. The back of the boat is a tire. The cabin is made from a gas can. The helm is a water tap, the throttle is from an old slot car racing set, the secret devices are triggered by typewriter keys… the list just keeps going.” Rogers notes that had the film been a traditional Aardman stop-motion film, the Jammy Dodger and the world it inhabits would have approached life size. “If our Roddy and Rita puppets were ten inches tall, the he entire underground city would have been 140 feet across to be proportionate and the Jammy Dodger would have to be five feet long,” she says. “With so many scenes taking place on that boat, with all its moving parts – the swinging Vegas dice, the mirrors – it was just too big a job.” Thousands of 3D models were needed to create Kensington and the dizzying world below. Modeling is the creation of all of the characters, props, and environments in geometric form. “It’s kind of like digital sculpting,” modeling supervisor Matt Paulson explains. “It’s taking the concepts and images and actually recreating them on the computer.” “Flushed Away” was incredibly challenging from a modeling perspective. Paulson says, “Typically, DreamWorks Animation films require anywhere from 1500 to 1700 individual models. Flushed Away had well over 3000. There’s a lot of complexity, a lot of unique models that we put together to create a sophisticated, elegant world Up Top, and the sewer, where everything’s scattered and trashed a bit. Making those two worlds separate but equally appealing was one of our biggest challenges.”

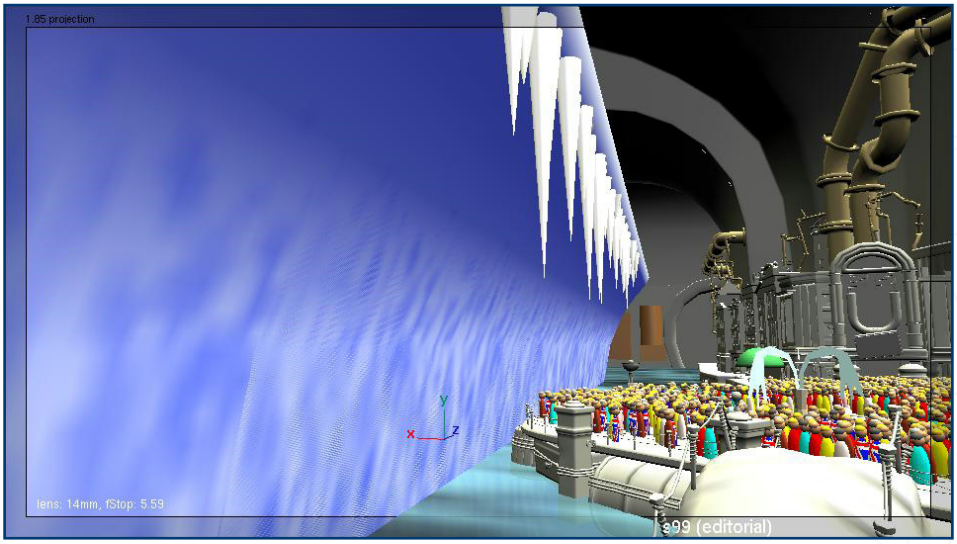


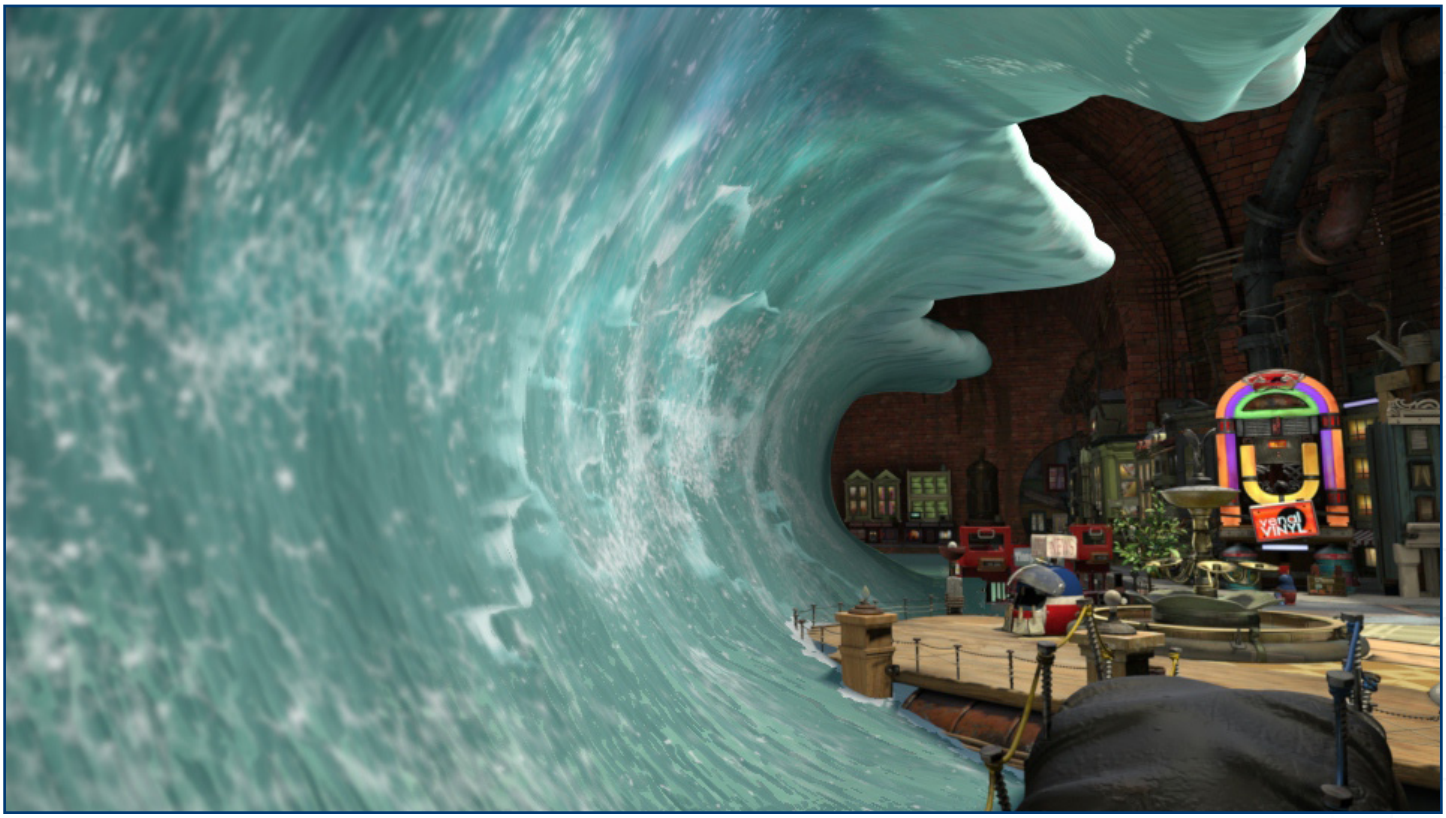
Rollin' on a River

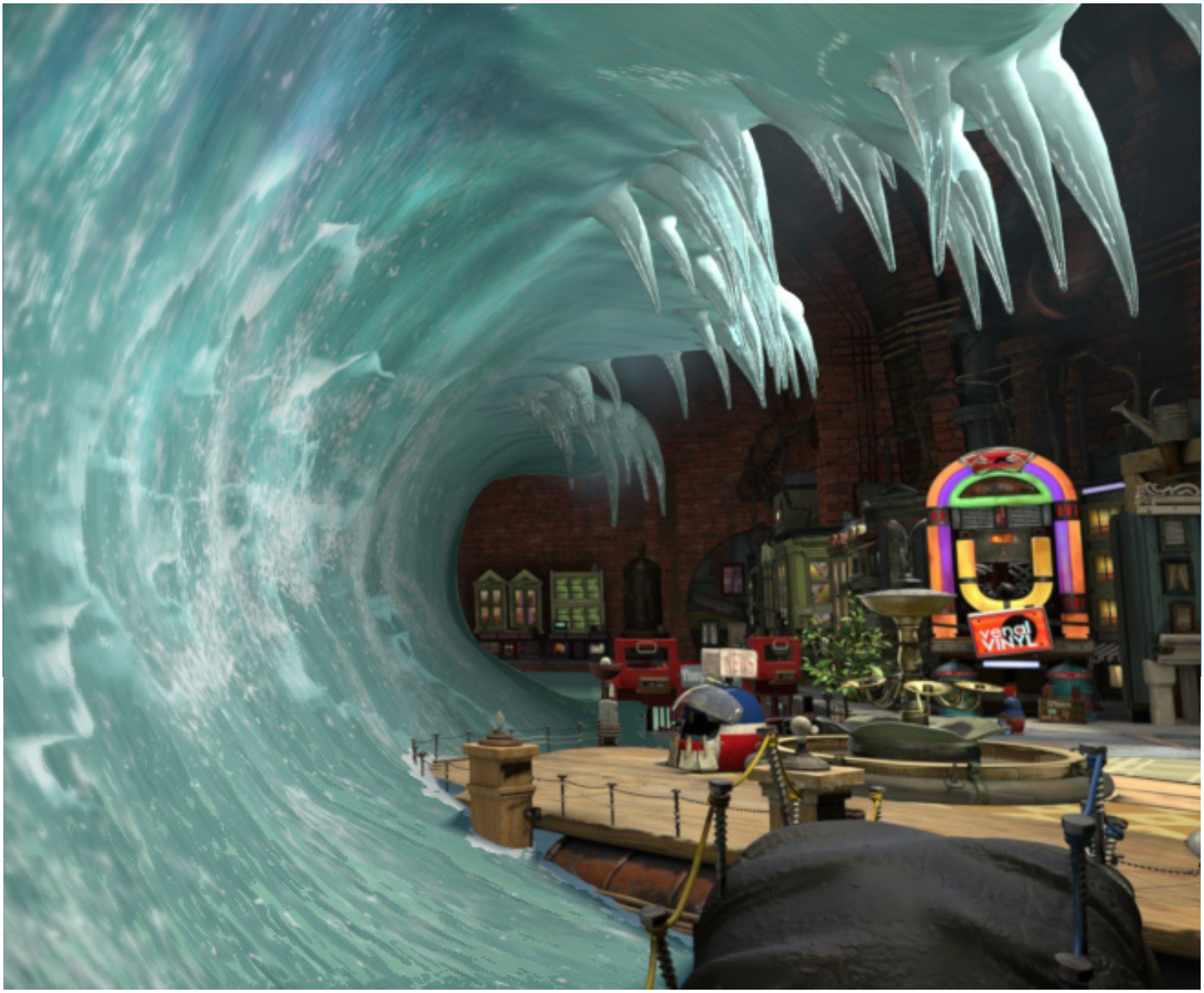
Since CG animated movies are constructed within a virtual environment, it's easy to underestimate the importance of one of the most fundamental pieces of filmmaking equipment – the camera. Cinematography is just as critical in CG as it is in live action or stop-motion. On physical movie sets, camera work is restricted by space and gravity. To film a scene from above, cameras typically run on tracks. Depending on the complexity of the shot desired, these structures can require intricate scaffolding and considerable manpower. And even with this effort, there will still be some limitations to the camera's range of motion. Of course, gravity doesn't exist in CG. A scene can be filmed from any angle in any motion the cinematographer desires, and an aerial shot is as straightforward as one on the ground. "We were able to fly the camera around," Kramer says, "and that paid off beautifully in the boat chase, which is one of the most important sequences in the movie." In "Flushed Away," this freedom of movement is needed to be restrained in order to preserve the Aardman











style. Co-head of layout Frank Passingham notes, "In terms of the camera movement, we wanted to keep the perspective very grounded, for the most part. I think we've emulated the Aardman look in the camera and lighting work as well as the animation." Co-head of layout Brad Blackbourn was mindful of this objective in overseeing the transition between storyboards and full animation. Layout involves blocking a rough version of the characters through their intended movements on the computer. In addition to character movement, layout artists must also recreate the camera perspectives implied in the storyboards. During this stage, the preliminary camera movement, lenses, and angles are selected. It's at this point, Blackbourn comments, that the crew is really "getting a feel for the geography of the set." "Everything breaks down into frames," Passingham adds. "You need to think about not just the camera move that you're working on, but the camera move that you just cut from, or are about to cut to. There are always accelerations and decelerations in movies, and you've got to be very careful about those. Those decisions dictate the speed of the camera you use, and the width of the lens." Blackbourn recalls the early stages of camera work on the scene that introduces the audience to The Toad's ice room. "We wanted to try to play up the power of this scene," he explains. "Roddy and Rita come face to face with all of the rats Toad has frozen. We wanted to give it sort of a 'death chamber' feel, when it's basically a refrigerator. We used around 100 shots for this sequence, to cover every possible angle. And we used some really wide angle lenses and low perspective." The majority of scenes in "Flushed Away" were filmed with 35-, 24-, and 18-millimeter lenses. "The characters' noses required us to be especially careful with the lenses," Passingham explains. "Roddy, Rita, Sid – they're rodents with long noses. When you're using a wide-angle lens, those noses can almost project right off the screen, so you have to stay on top of that." Camera movement was just as tricky as lens selection. For the sequence where Roddy is flushed from



his home, the camera's motion was carefully designed to capture his disorientation. "We wanted Roddy to be spiraling, descending quickly, and very shaken," Passingham says. 'So while we're tracking forward, we're actually sort of spiraling in the camera at the same time. And putting a bit of shake in the shot, some rough camera movement to show that he's really being buffeted as he's propelled along the popes. The camera motion really conveys that he's taking a rather tough and extensive trip to the sewer world." The climactic boat chase on the Jammy Dodger was one of the most challenging sequences to shoot. Bowers summarizes the scene: "Roddy and Rita are being chased by Spike, Whitey, and the rest of The Toad's bunch. Rita hits the turbo boost, the fire extinguisher goes off, and the Jammy Dodger just shoots down the tunnel." "The first thing we had to work out was the speed of the boat," Passingham recalls. "At the beginning, the boat only uses one steady speed, then there's a different speed when the chase begins, and then a final speed once Rita switches on the booster. And those speeds actually dictated the length of the tunnel." The backgrounds were blurred to convey a sense of motion and speed. But to really make the sequence spectacular, the team turned to perhaps the most celebrated chase scene in motion picture history. "We realized that our chase was actually similar to a car chase, so we actually used the car chase sequence in 'The French Connection' as a reference. In that film, a lot of the cameras were actually mounted on the bumper of the cars. So we used a similar approach, and mounted a camera close to the water. It really captures that sense of speed and makes the shot look even more thrilling."



The Wet Look

While water is considerably more problematic in stop-motion, it's not exactly easy in CG. Lighting artistic supervisor Mark Edwards notes, "Water is particularly difficult because, obviously, people already know what it looks like. They know how it moves and behaves, and they're going to be watching with a critical eye. So we needed to capture just enough realism in the water's appearance and movement without disrupting the movie's visual style." To design the varying water patterns, the effects team combined technology with basics: fluid-simulating software inspired by the real physical properties of water. These physical experiments are used as references, and then it's up to the effects team to translate the real-life visuals into CG. "There's a scene right after Roddy is jettisoned out of a pipe and up against a sewer grate and is doused with water," Lindquist recalls. "We weren't sure exactly how that should look, how the water would appear on impact, how it would drip off Roddy's body. So we got some buckets, some hoses, some volunteers, and went outside." The reference for the toilet flush scene was a little more challenging to obtain. "Toilets that aren't low-flow are practically nonexistent in Los Angeles," Kramer explains. "We went outside the country to find the right flush. The whirlpool that sucks Roddy underground was actually inspired by footage of a toilet in a British pub, courtesy of one of our Bristol colleagues." Lindquist adds, "The flush scene is actually a sequence of three shots, using two different techniques to achieve the look. The first two shots were created by taking a flat surface and deforming it into a shape that closely resembled the flushing water from the pub footage, and













Gregson-Williams embraced the process of composing for "Flushed Away." He states, "It's a particularly collaborative experience, scoring an animated movie. It's quite a substantial commitment, compared with live action. It's never really finished until it's finished. Cues change, scenes expand. I'll start developing the music when the film is in the storyboard stage, then adjust it as I go along." When he first started composing the "Flushed Away" score, Gregson-Williams focused at first not on the beginning of the film or any of the fast-paced action sequences, but a poignant moment in the middle of the movie. "There's a scene in the middle of the film where Roddy and Rita are having dinner, and she's asking him to tell her about himself," he says. "And Roddy claims to have a wonderful life, surrounded by friends and relatives. But it's not true, and he's beginning to realize that he's actually sad about that. It's a subtly emotional scene, and a momentary break from the frenzied pace of the film. It might sound a bit odd that I would start in the middle, but I saw it as the point where it all ties together. Having started there, I then doubled back to the beginning of the movie and thematically built towards that crucial scene." The song selection was equally deliberate, and ultimately parallels the somewhat haphazard quality of the sewer world. "We have a fairly eclectic selection of songs and artists," Bowers notes. "We wanted it to be fun, but we also wanted to capture a wide variety of different feelings, because it's a city, complete with that urban city feel. So we have several artists, including the Jets, the Dandy Warhols, even Tina Turner." But the filmmakers didn't limit themselves to established musicians; "Flushed Away" also marks the musical debut of the scene-stealing slugs. These slippery singers started off as extras, just another kind of unfamiliar creature for Roddy to encounter with trepidation. But Fell and Bowers soon realized that the slugs had some serious comic potential. "We started off with just a few slugs that let out these hilarious high-pitched screams when Roddy first meets them," Fell recalls. "But they were so funny and cute, we started to look













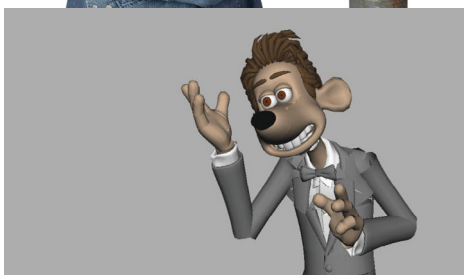


for other spots in the film for them to show up." Since the slugs had become a crew favorite, the bid to increase their screen time was well-received. "Before long," notes Kramer, "we were thinking, 'Wouldn't it be great to have them singing?' So they became something of a comic Greek chorus, which contributed to the kind of silly, whimsical, humorous style of our movie." While the slugs do provide the background vocals for a scene where Roddy serenades Rita from the underground river, Bowers admits that there was some lip-synching involved in the finale, a spirited rendition of "Proud Mary." "We really wanted to hear Tina Turner's voice coming out of those slugs. We just thought it would be very funny. And it is."



RODDY a.k.a. Roderick St. James (voiced by HUGH JACKMAN), is a pampered pet mouse who lives in an elegant penthouse apartment in upscale Kensington, London. When the family goes away on vacation, it's Roddy's turn to have the run of the house. He's never really ventured outside the safe walls of his luxurious home, or never really needed to. Or so he thought. When he gets flushed down the toilet he is surprised by the amazingly beautiful and vibrant world of rats he meets down in the drains of London. He learns to become more adventurous and learns about family and friendship from a gutsy rat named Rita. He learns that truly, no rat is an island.





















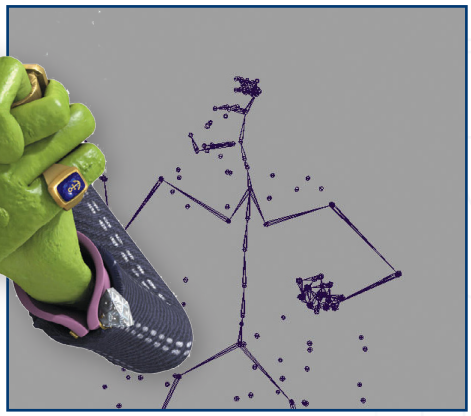
RITA (voiced by KATE WINSLET) is the complete opposite of Roddy. She's a confident and adventurous risk-taker. Rita lives for the moment and believes that taking chances is an essential part of life. She comes from a large family. Her mom had 37 kids by the time she was 10 months old. Rita has spent most of her life working with her Dad as a scavenger on the family boat, the Jammy Dodger. When her Dad has to take a break from the action due to an accident working in a dangerous part of the drain, Rita takes on the job of providing for her mad but lovable family.







THE TOAD (voiced by Sir IAN MCKELLEN) is a pompous, well-dressed, aristocratic amphibian who lives deep within the drains of London. His claim to fame is that he was once Prince Charles' favorite pet. Sadly one day, he was replaced by a pet mouse, and when the prince wasn't looking the Toad was flushed down the toilet by a palace flunky. Now the Toad hates all rodents. This hatred motivates his diabolical plan for the sewer – to wash away all of the rats in a Great Flood and repopulate the sewer with an army of tadpoles.

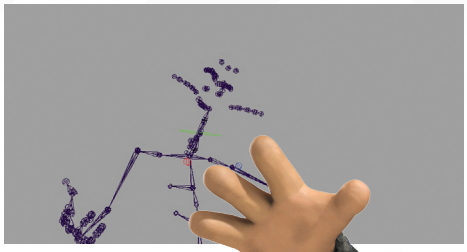






SID (voiced by SHANE RICHIE) is a big, enthusiastic, vulgar sewer rat who arrives in Roddy's apartment when he is blown up through the pipes by a burst sewer main. Roddy's place is like heaven to Sid - all the food you can eat and a big telly to watch the World Cup final on. With Roddy gone, Sid takes over Roddy's life taking the phrase "all money and no taste" to new extremes.

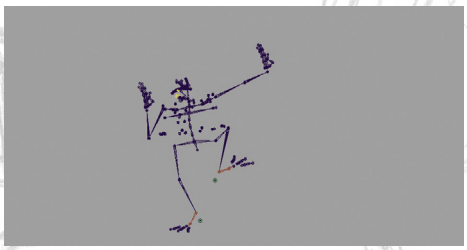


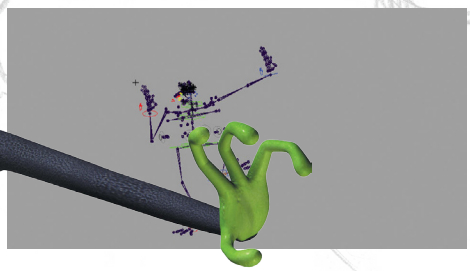


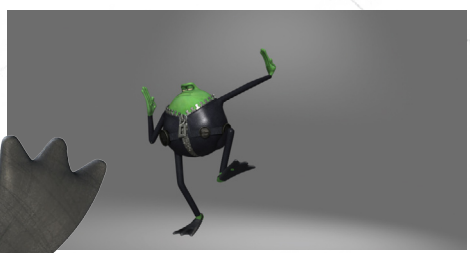




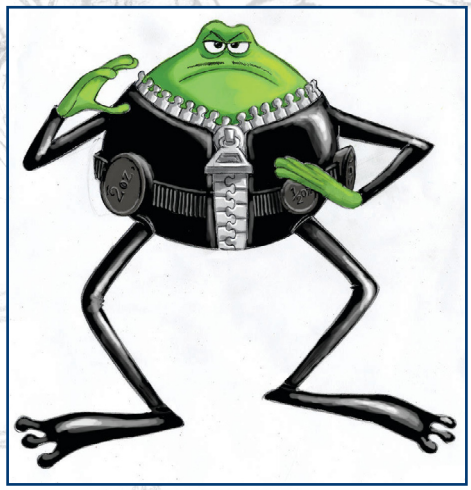






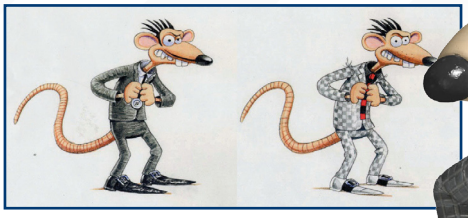






LE FROG (voiced by JEAN RENO) is The Toad's mercenary French cousin. He and his gang of vicious henchfrogs will kill for a price, but not before they've had a proper three-course lunch. Le Frog approaches his uptight English relative with a mixture of insouciance and disdain. He thinks his cousin's rodent hating obsession is very unhealthy. Despite Le Frog and his gang's vicious demeanor they are more comic than deadly (being funny little rubbery fellows after all).

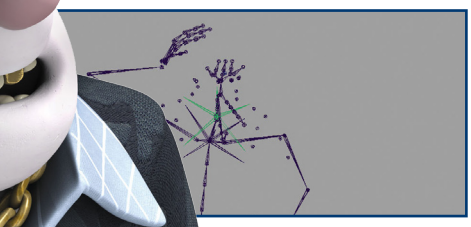








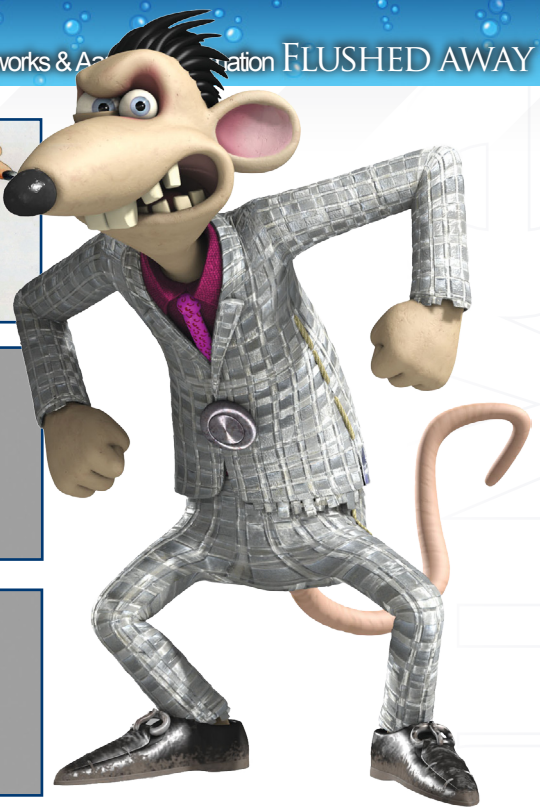












WHITEY (voiced by BILL NIGHY) is an albino ex-laboratory rat. He had one too many "shampoos" up in the laboratory which left him completely unfocussed on doing bad deeds. He adds to Spike's misery by undermining him and not acting like a proper hitman.





SPIKE (voiced by ANDY SERKIS) has elected himself as the Toad's chief henchrat. This is his first job as a bad guy. He tries really, really hard to act like a ruthless cold blooded killer but in reality he still lives with his mum and his middle name is Lesley. He desperately overcompensates for these shortcomings but his over-zealous approach to his work always insures a sticky end for him.



FLUSHED FACTS

When Roddy is "flushed away" from his posh Kensington flat into the mysterious world beneath London, the first being he encounters is a slug voiced by none other than Hugh Jackman. Sound engineers took Hugh's scream as Roddy and reworked it electronically so that the slug would scream exactly the same as Roddy (albeit at a considerably higher pitch). There are 658 characters populating the underground world. (By way of comparison, England's smallest city, St. David's, has over 1,600 people.) All of these characters can be seen in a single scene at the end of the film: they turn out to watch the World Cup Final on a giant screen in Piccadilly. Because non-"low flow" toilets are so hard to find in the Los Angeles area, Aardman colleagues in England videotaped footage of a toilet flushing in a local pub and sent it to DreamWorks's Glendale studio for effects reference. (There is no word on whether they were ever allowed back inside the pub.) If all the tunnels in "Flushed Away" were laid end-to-end, they would cover 6.5 miles. Compare that to the 30,000 miles of sewers underneath London in real life! The sewers in the film are held together by over 38,380 individual bolts and houses







220 buildings spanning 10 adjacent sets. In the scene when Spike gets electrocuted, an armature (rather than a skeleton) is visible inside his body, similar to what he would have had as a stop-motion puppet. As part of the reference trip to London, several members of the crew – the visual effects supervisor, the directors and production designer – toured the city's sewers. In Tabitha's room, there are a variety of dolls from previous DreamWorks Animation films, including a Gromit and several bunnies from "Wallace & Gromit: The Curse of the Were-Rabbit," an Alex the Lion from "Madagascar," and a Dragon from "Shrek." Liquid Nitrogen takes less than 30 seconds to freeze, but about 259,200 seconds to animate.



FLUSHED AWAY

For more information please visit

www.flushedaway.com

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Advice for Aspiring Artists

Over the last Year, 3DCreative has been asking industry professionals one important question:

"What one piece of advice would you give to an Aspiring Artist?"

With a new year and a fresh start, here are the answers...

ASPIRING ARTISTS ADVICE FOR


Wei Wei Hua

"WHAT ONE PIECE OF ADVICE WOULD YOU GIVE TO AN ASPIRING ARTIST?"

WEI WEI HUA

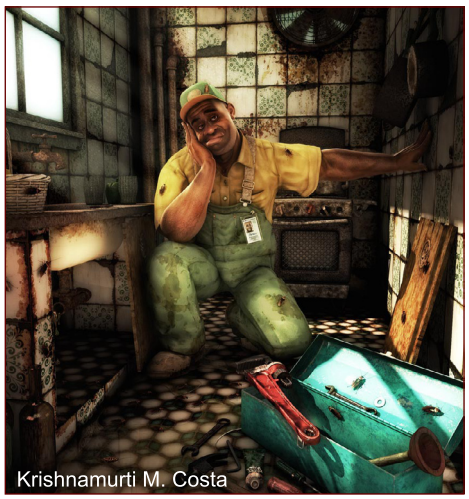
Fantasy Artist and creator of 'Green Valley'

"It is very important that you love your job. It can make you happy and you can produce satisfying work. You also have to treat your designs seriously. If you want to make people feel touched by your work, you have to feel passionate about it first."

KRISHNAMURTI M. COSTA

Character Artist, Cafe FX

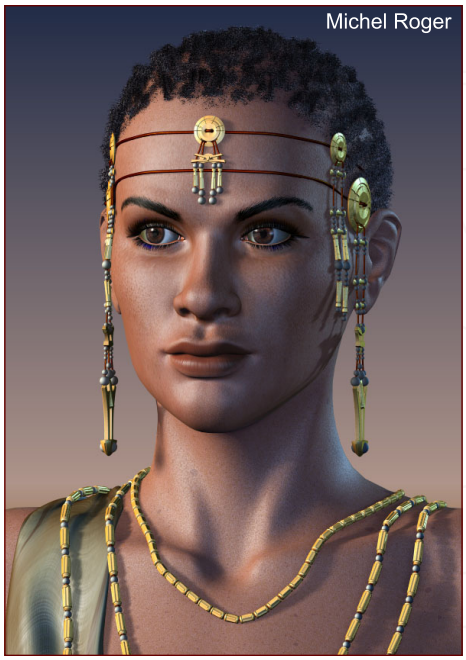
"People have no more reason to complain about the lack of information. The Internet is your friend. Google can help you a lot and CG online resource sites are full of great tutorials. Great art and animation schools are all around the world. If you are not interested to research things or work hard I feel sorry to tell you that maybe you will have no future doing 3D, and even worse if you are planning to get into the industry. People working in the industry are curious by nature and responsible for new techniques that a lot of the time come from a mixture of ideas from different sources. Working hard and being curious, you can have much more of a chance to get into 3D. One thing you can't forget: technique is the smaller part! To learn a new technique is the simplest thing. What you really need is a good art background to succeed doing CG in general. The best CG artists I know are great traditional sculptors, painters etc. More art fundamentals can make your transition very easy sometimes. The mantra is "curiosity and hard work..."."


Krishnamurti M. Costa

MICHEL ROGER

Artist, Attitude Studio, Luxembourg

"Get seriously into it, which means a lot of hard work but not only in learning 3D tools and techniques. If possible, try yourself at different art forms such as drawing, traditional modelling or photography, and develop a strong artistic knowledge base. And the most important is: never think « that's it, I'm good ». Always re-evaluate yourself and be humble, as there are so many things to learn, it takes a lifetime."


Michel Roger

PÄR TINGSTRÖM

Starbreeze Studios, Sweden

"Don't let your employer take advantage of the fact that you love your work, don't burn your self out because the project you work on is badly planned or suffers from poor leadership."


Pär Tingström

JAMES KU

Next Gen Developer, Whatif Productions, USA

"The CG industry is definitely not an easy one to break into. This industry, whether it's film, TV or games, seems very sexy, so it attracts a lot of people. The competition is very fierce and I would say my best advice is to not give up. It sounds quaint for me to say that, but this world is filled with people who would love nothing more than to tell you that you'll never achieve your dreams. If you love doing CG then I think it will show, sooner or later it will show, and good things will happen. The one other thing I'd like to give as advice is to keep the long view. Make sure you see the far view of things, the big picture. What I mean is, CG is like any other art, it's a life long pursuit. Don't perceive graduation from art school or getting your first job as the end of your artistic development, it's just the beginning. Don't stop doing your personal art and practising in your spare time. I see so many artists who get their break in the industry and then from that point on, only do CG at work and then go home and spend the rest of their time in front of a TV or playing games. The longer you can stay hungry, the more you can treat every project like the first and the last project you'll ever do, the more you'll develop as an artist and the more your work will shine. My father once told me, the way to be a good man is to be forgiving with others and unforgiving to yourself, I think that's applicable to all things in life. Stay humble, stay working and best of luck to all of you..."


Jaques DeFontaine

JORGE BALDEON

Freelance Artist, Ecuador

"In many interviews artists recommend to practice a lot and don't give up, and they are right. What I have to say is to think outside the box, when you have an idea then twist it upside down and you will see a new world of possibilities. Try to learn other cultural views in the same matter and it will surprise you how others see the most common things in new, interesting ways. The technical side of 3D is actually getting easier and more reachable to artists, so we have to focus in our ideas and how they will look. One important factor for any aspiring 3D artist is to learn photography. At least the basics in composition, depth and contrast. It helped me get a better grip on 3D knowledge and flow..."

JULIEN J. MORTIMER

Creature Artist, UK

"For anyone just starting out it can seem quite daunting at first and it's getting more and more competitive. You have to be prepared to work hard, for a creative artist, try and focus on getting your own style and look to your work so that you stand out from the crowd."

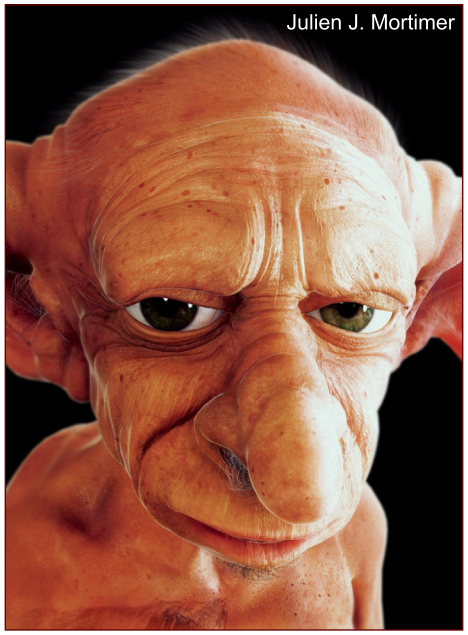
JAQUES DEFONTAINE

Freelance Artist, Belgium

"I'm not too good at advice, but there are a couple of things which I find important. Always try to set up some kind of a pre-production period. I find this part very important… it's not always possible though. For human or animal modelling buy/study anatomy books, they are almost essential. Realism is a very good exercise/challenge… style can come afterwards. Besides, if you watch movies such as 'Finding Nemo' or 'Shrek', they're always using reality as reference, and sometimes, even if the movie is basically more cartoon, it's mainly in the animation part. It's just that, they stop where they find it might be too realistic for the overall style of the movie. Learn to observe… it's definitely essential and unavoidable if you go


James Ku


Jorge Baldeon


Julien J. Mortimer

for realism. Last one… keep in mind that you were not born talented, you might have a gift but talent doesn't exist without continuous work and passion… this is just my opinion though!"

RAPHAEL LACOSTE

Art Director, Canada

"Firstly, what is a good 3D artist? In my opinion, 3D is just a tool, it is like a pencil, and if you have a good basis in traditional art, you'll be a better 3D artist. It's like a good keyboard player, if he has a strong background in piano, jazz and classic, he will be a better keyboard player, even if he plays dance music… I think that to have a good sense of composition and lighting, a 3D artist should spend more time taking pictures with his camera, looking around and drawing…"

HEBER ALVARADO

Next-Gen Creature Modeller, Propaganda Games, Canada

"Don't compare the level of your work to your classmates, compare yourself to the industry and strive to achieve or surpass that, because that's what you will be judge upon."

ANDRÉ KUTSCHERAUER

3D Visualisation Artist, Germany

"With Dreamweaver and Photoshop you can get a very nicely designed online portfolio with less time being spent on learning. I think it's not important to get a big flash site. I think a simple but nicely designed html page is enough. Just make it so it hits the right spot!"

RICHARD ROSENMAN

Head of 3D, Redrover Animation Studios, Toronto, Canada

"Make sure you have a strong trust in the people you work with as you will have to rely on them and they will have to rely on you. Know how to resolve conflicts and issues in a mature manner as these will always inevitably come up, especially in a creative environment. Plan ahead so that you're prepared and capable of taking on the workload that may potentially come your way. And of course, the most important advice of all I could give to anyone in this line of work is that hardware and software are completely irrelevant in this field, unless you are a programmer. It doesn't matter how well you know these tools or how many of them you know. What matters is how much creativity you posses and what you do with it. The computer is simply another artistic medium, but a fundamental knowledge of art concepts such as colour theory, design, composition, and anatomy are crucial in developing a successful career as a digital artist."

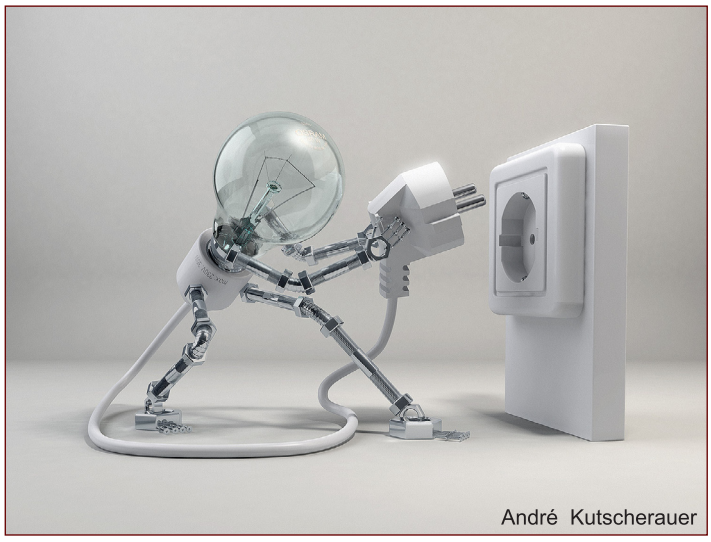
VITALY BULGAROV

Freelance Artist, Russis

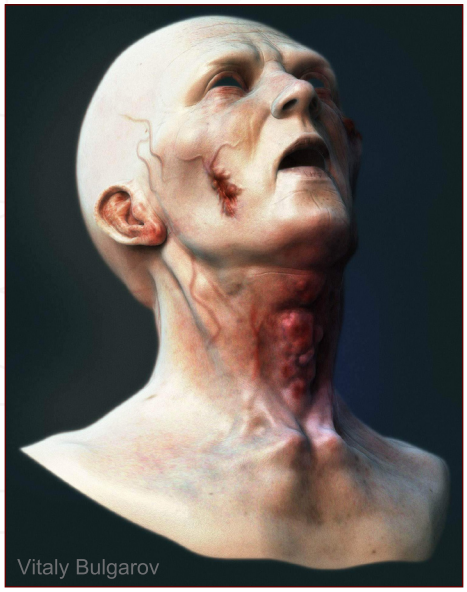
"Aspiring man has only his will and his patience to achieve anything he wants. Work... work hard... work as hard as you can!"


Heber Alvarado


Richard Rosenman


André Kutscherauer


Raphael Lacoste


Vitaly Bulgarov


Adel Adili


Rich Diamant

ADEL ADILI

Founder, Leda Studios, Iran

"Good forums are a suitable place for sharing our ideas, and if somebody is in trouble they can get hints from other artists' comments. If I want to say something as a freelancer, I would say: be patient and keep your clients satisfied. But some advice for those who want to be a good artist is to have a strong imagination. When working, try to provide the same condition as the theme of the project for yourself to feel the mood of it, because you have to work with all your heart. A good work needs all your feelings and emotions."

RICH DIAMANT

Lead Character Artist, Naughty Dog Studio

"Don't stop learning! The most successful people I've met are the ones who are always on top of their game. They know the latest and greatest methods of working and are constantly trying new ways to enhance themselves as artists. A vast knowledge of tools and pipelines will easily give you an edge over someone else whose knowledge is very limited. This industry is not easy. To be the best, you have to work for it."

CARLOS SALDHANA

Director Ice Age 2, Blue Sky Studios

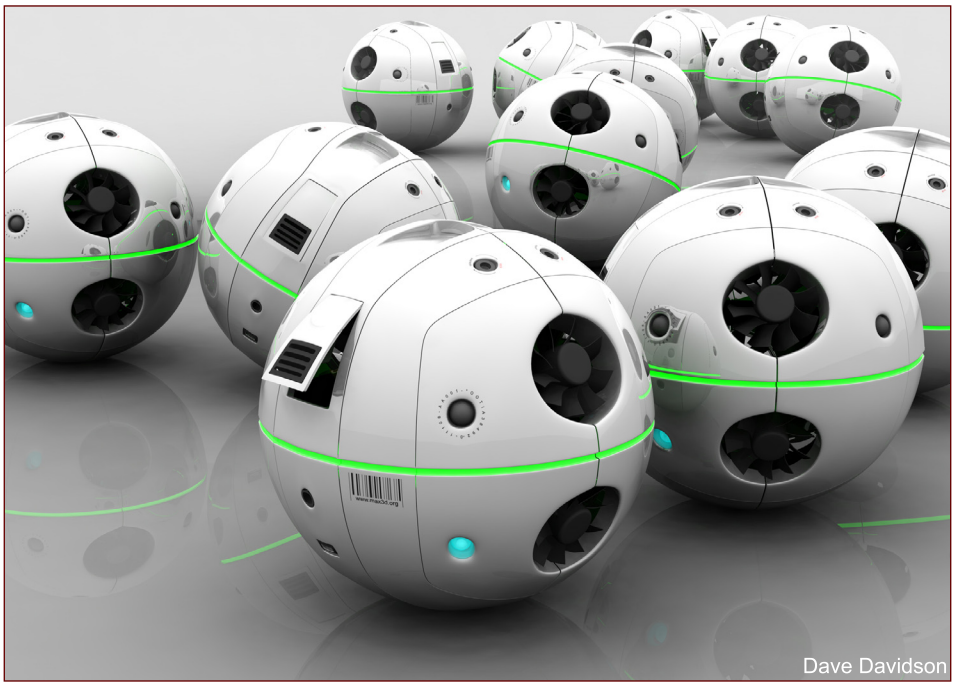
"Talent comes in first place, but for a foreign worker to America, for me, my diploma was essential for me to attain my work visa. This is what makes it difficult to get a contract. The optimum way is through the universities. The majority of our beginner employees come from universities and many of them are foreign. With many different skill requirements, being able to pick specialists in each field makes it much easier for them to obtain a specialist work visa.

DAVE DAVIDSON

Freelance Visualisation Artists, UK

"Keep at it, expect knock backs, down times and always try to be positive about your work and the projects you work on."




Dave Davidson

GRZESIEK JONKAJTYS

Artist, Cafe FX

"Be patient: draw; paint; make photos and observe; always find good references."

RYAN HONEY

Co-Founder, BUCK Studio, LA, USA

"Hmmm. My advice would be to spend your entire student career doing one amazing showpiece that not only incorporates everything you have learned but defines what you are passionate about. One piece of amazing work is much more effective in getting work than a bunch of mediocre projects."

LIAM KEMP

Freelance Artist, UK

"I would say that if you really are passionate about making a movie, then you must just do it. There is nothing worse than living with regrets about not taking your chances when you had them, and if you feel you don't have sufficient spare time, if you care about CG art enough, you will make the time. Lastly, get it into your mind that once you start a project, there is no going back - you no longer have the option to quit."

RODRIGUE PRALIER

Concept Artist, EA, Montreal, Canada

"My advice would be to be really motivated, always look for improvement, be aware of what is happening in the other industries (games, illustrations, comics etc.) and to not be afraid of re-doing the same thing many times."

PATRICK BEAULIEU

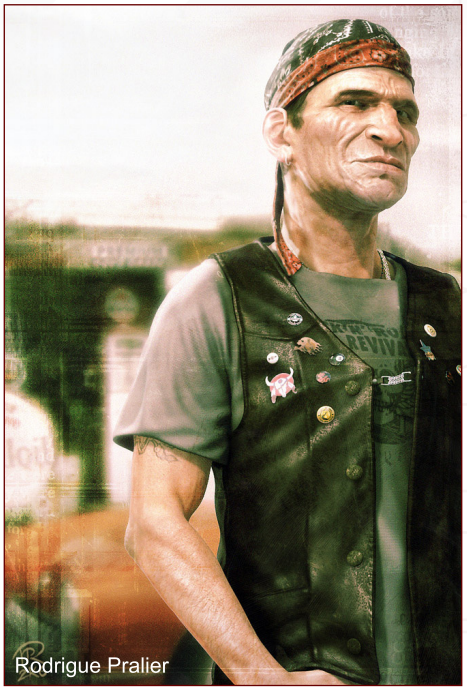
Character Artist, Ubisoft, Quebec, Canada

"I have been involved in different areas in 3D - each one has helped me get to where I am today. I don't regret any choices that I have made or any decisions I have taken. There was always a good reason for these choices. Over the last 6 years in this field, I have met many nice people, have made good friends, and have learnt a great deal. I am happy to see how I have evolved in 3D and I hope to continue improving. I hope to have more good opportunities in this field and I will keep working hard to reach my goals!"

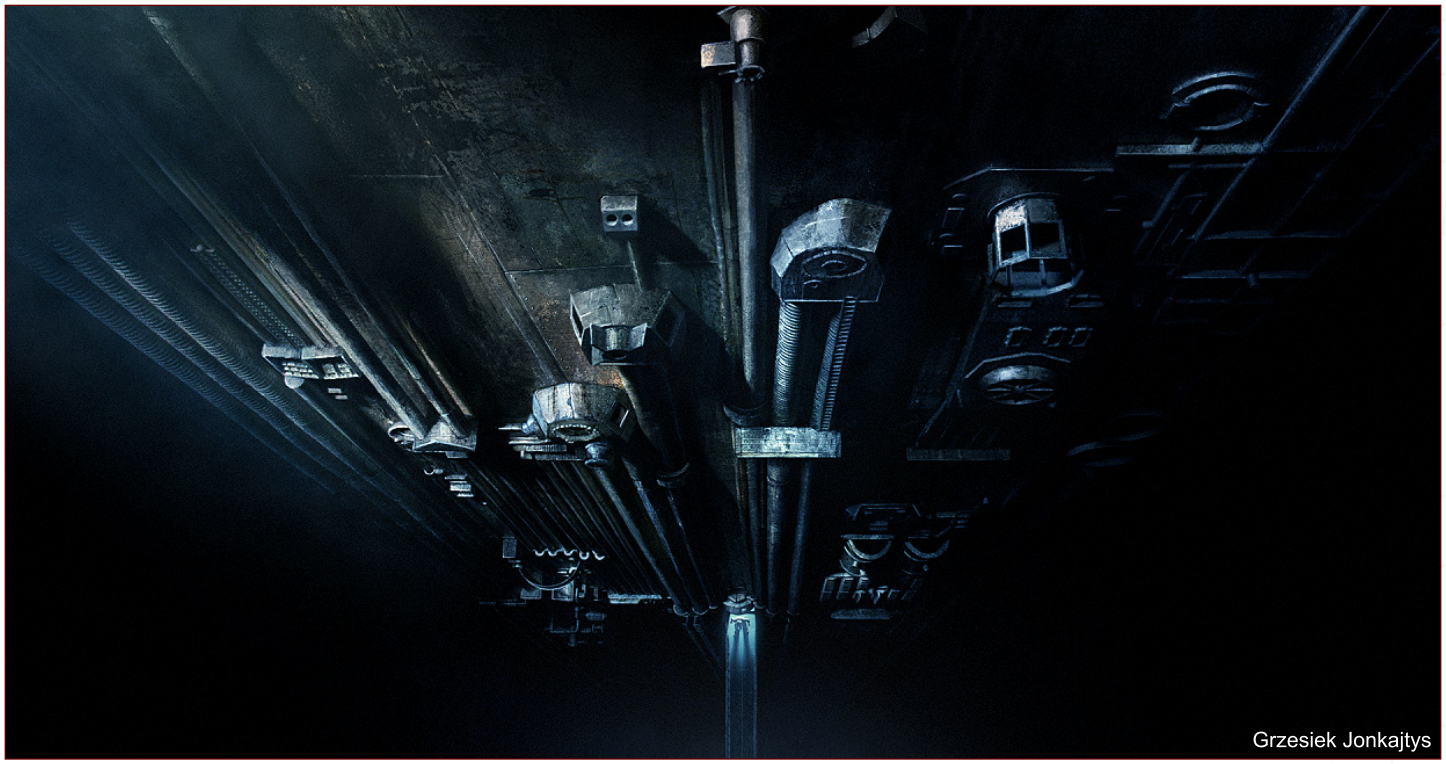
MANUEL MACHA

Lucasfilm Animation Company, Singapore B.V.

"Especially for people who are trying to break into the industry, my advice to them would


Rodrigue Pralier


Manuel Macha


Grzesiek Jonkajtys

be not to give up too easily! Right now, more people than ever before are trying to get a job in CG and it's really competitive out there. I think a good way to get your foot in the door is through an internship because, besides good artistic and technical skills, knowing the right people really helps. Also, having a big network of people is essential in order to always be up-to-date regarding new projects and opportunities. Of course, all the things I have mentioned will only make sense if you have the artistic and technical skills. Most other artists I know all have this natural curiosity in common - always trying to improve & learn new things!"

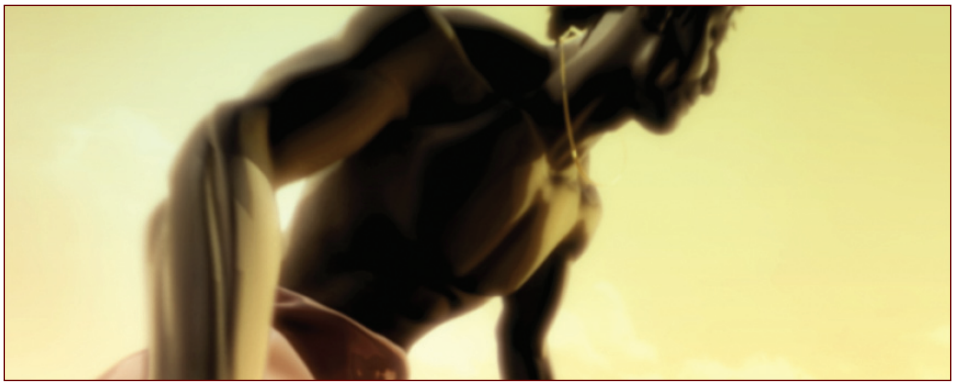

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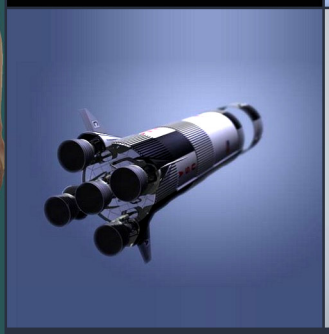
"Anyone aspiring to be in a creative field - any creative field - should never be afraid to fail or to take chances. It's when you free yourself of these constraints that the best and most creative ideas are born and a project can take on a whole new dimension. Concept is "King", so the more creative you can be initially, the better your work will turn out in the end."











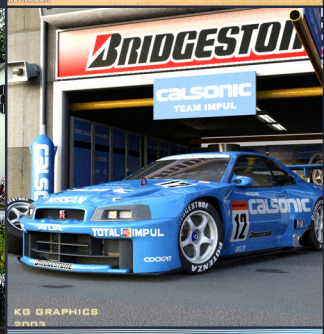



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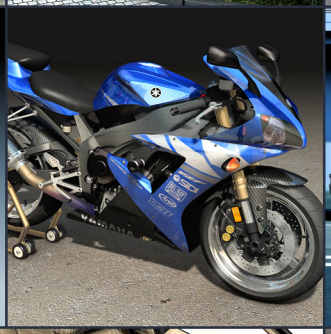
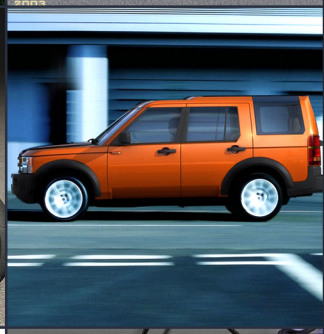
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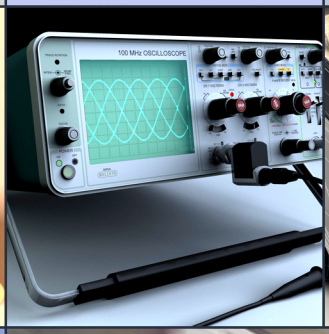




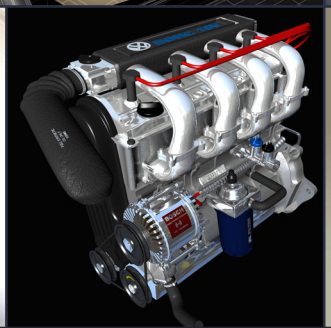












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Tiziano Fioriti

Zdenek Urbánek

Arnaud Servouze

JoonMin Park

Zhang Yang

Piotrek Gruszka

Mauro Baldissera

Raymond Yang



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Raymond Yang

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You can follow the 'Making Of' this image later on in this issue of 3DCreative Magazine...



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HOUSE

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Quantum Dreams

THE ART OF STEPHAN MARTINIERE





3DCreative have teamed up with 3dtotal.com and design studio press to give you a preview of some fantastic books on offer.

This Month; Quantum Dreams.

"There's something almost uncanny in seeing things you've imagined, and only described in words, depicted. It's even more unsettling to see them depicted more clearly and vividly and accurately than you imagined them. Stephan Martiniere's covers for my books have that effect on me. They look as if he has taken a camera and a sketchbook to these very worlds, and has seen more of them than I did. We should all be grateful for Martiniere's mind's eye."
– Ken MacLeod , author, The Cassini Division and the trilogy, The Engines of Light

"Stephan isn't just a stunning illustrator, he is truly a designer, with a great sense of harmony and style. He can create extremely organic objects or creatures as well as the most stylistic architecture of today and tomorrow."
– Patrick Tatopoulos production designer, I, Robot, Dark City, Independence Day

"I find the uniqueness of his vision and confidence of his presentation endlessly fascinating and inspiring. We are fortunate that Stephan's skills allow us to experience his fantastic imagination and all of his worlds."
– Ryan Church, concept design supervisor, Star Wars III

QUANTUM DREAMS: The Art of Stephan Martiniere, is a collection of his sci-fi book cover paintings, video game designs and personal art. Stephan takes others' descriptions of faraway, imaginary realms...and makes them real. Stephan's career has taken him from France to Japan to California, where he has worked in the fields of animation, concept art, theme park motion ride design, video games and book cover art. He helped design the worlds of I, Robot and Star Wars Episodes II and III , and with his book covers makes fantasy worlds come to life with a single image. QUANTUM DREAMS contains 130 illustrations, including supporting sketches and early versions of finished pieces, with descriptions that give you an inside look into Stephan's creativity and process.

Product Details
Paperback: 80 pages
Dimensions: 9 x 12 inches
Illustrated: 130 illustrations
Publisher: Design Studio Press
ISBN: 0-9726676-7-9

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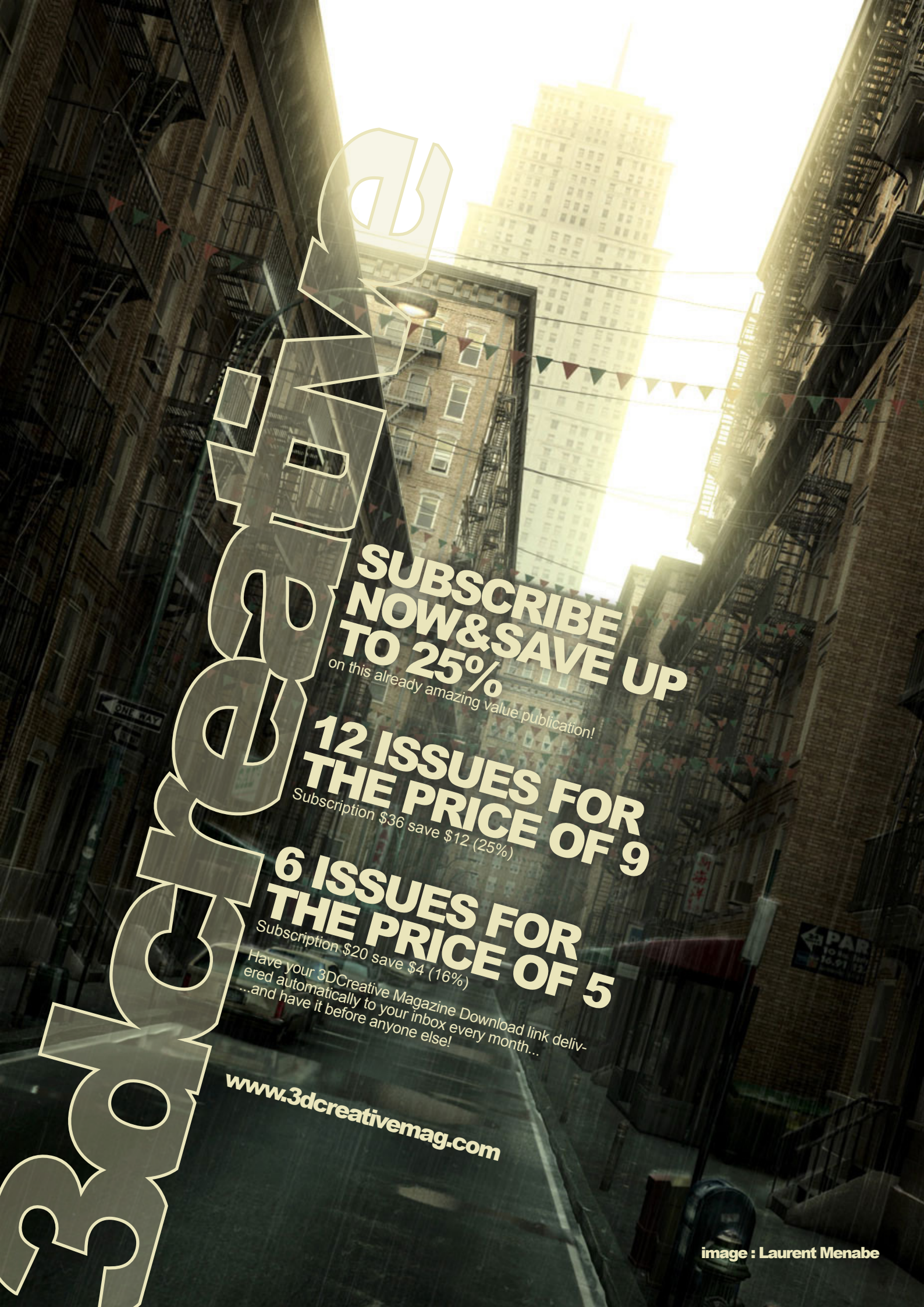


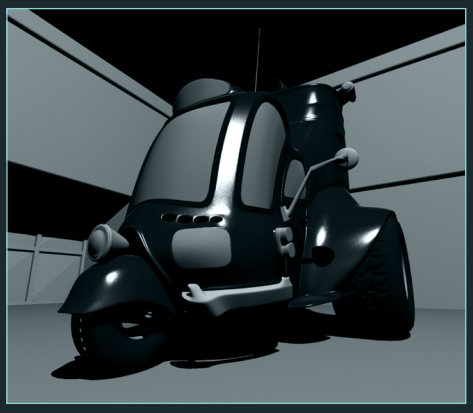
HOSTILE TAKEOVER

book cover | written by Sandra Shwartz

The request from the art director was simple and straightforward; “babe in space with a big gun.” I had done the Polyhedron Magazine cover a year before, depicting a pilot babe with mecha robots, so I wanted to do something different. I chose orange as an overall color simply because I hadn’t done a lot of paintings in that color palette. It also happened that Jupiter was the location of the story. It was a perfect choice. The painting of the character uses a lot of a technique I refer to as “scratching,” juxtaposing different colored layers and using the eraser to scratch/uncover the layers underneath. I find the technique very direct and gestural.


STEPHAN MARTINIERE 2004


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TUC TUC Is our new precise, step-by-step tutorial which will begin with a vehicle model and cover the principals of applying shaders, placing it in a simple scene & following with a two part section on both lighting and rendering. The tutorial will begin by creating and applying materials for the various parts of the car such as glass, chrome & tyres as well as texturing some simple geometry that will make up a scene. It will then move onto lighting where the focus will be on setting up a lighting rig and the various parameters connected to this. Finally the series will culminate with a section on rendering where the aim will be to finish with a polished image.

3DSMax Version
Page 107

Cinema4D Version
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Lightwave Version
Please see notice on pg 144

Maya Version
Page 127

Softimage XSi Version
Page 134

This Month :

APPLYING MATERIALS & SHADERS PART 1

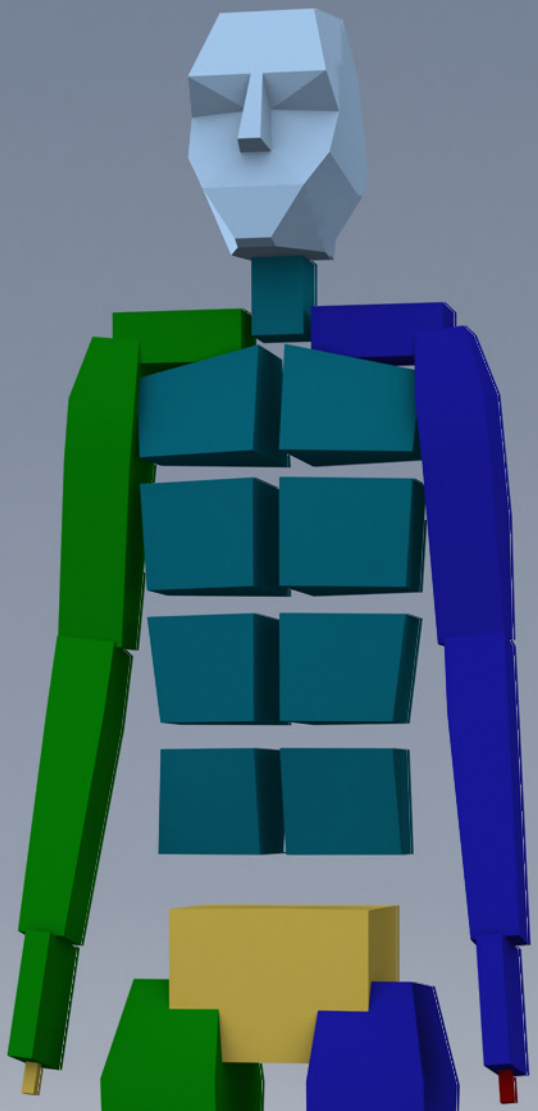
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3ds max

Wayne A. Robson takes us through the basics of using the 3DSMax Biped, when and where not to use it, and why it is still one of the leading animation systems available today...



POSING & RIGGING

with the 3DS Max Biped

POSING & RIGGING

with the 3ds Max Biped

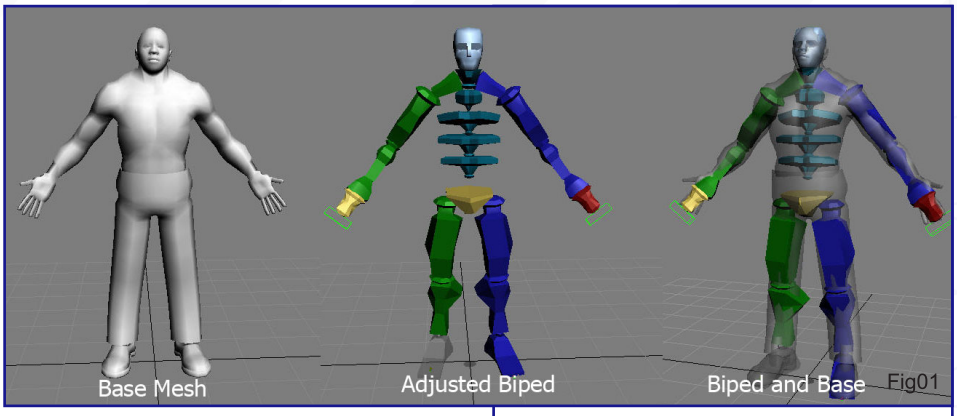


Fig01

CREATED IN:

3DS Max

First of all, let me explain what biped is and isn't, what it does well and what it does not do so well (or does badly at). Sometimes confusion of when it's a good idea to use biped, and when it isn't, can cause a whole world of problems (Fig.01).

Biped is good for:

• Posing a low-resolution mesh you'll be using in Zbrush, Mudbox, or Silo 2;

• Posing and animating game models;

• Simple animation where total realism isn't required;

• Passing animations from one biped to another.

Biped is not so good for:

• A realistic life like rig (plug-ins that add muscles etc. are available but aren't to the same standard as a custom-made rig);

• Reacting like a custom FK/IK rig (although it is possible to add this to biped, it then ceases to be a default biped in my opinion).

So basically, if you want to pose a low-resolution cage (either before or after you've done your sculpting), or simply make a few test animations, it'll handle that job very well. What I'll be covering in this article with biped is how to use it to pose a low-resolution mesh to import into Zbrush. My workflow is usually to work on my character in a default pose that I model the base mesh in. I then sculpt in Zbrush until I am happy with it, and at this point rig it using biped, before re-importing and solving any problems that may have occurred. These problems could be stretching or interpenetration issues from the pose or any number of things. When I use biped to pose a mesh I don't get too detailed in skinning a mesh really well. The reason is that unless I'm animating the mesh there is no real reason in spending hours skinning a model perfectly if no-one is ever going to see it move. Especially if it is a problem that could really be fixed a lot faster in Zbrush. But obviously, if you're going to animate it at some point, you'll want to spend a good deal of more time on it. When it comes to giving it some sort of skin to allow it to react along with the biped rig in a good enough way for posing, you have two choices. You're really going to want to use the Skin modifiers if you're re-importing back into Zbrush, rather than the physique modifier. The reason for this is that the physique modifier re-numbers the vertexes so you'll end up with a weird exploded mesh on import back into Zbrush. Obviously if you're posing before you start the Zbrush detailing and sculpting, then feel free to use the quick and dirty method with physique.

Now with the Skin modifier things are more like a standard rig you may make (Fig.02 & 03). This allows you to set the weights and envelopes of each bone on any vertex in the mesh, allowing for much more realistic deformation. (Of course, although this sometimes takes longer, it means less correctional work in Zbrush as a result.) I'll be showing you how to use the skin modifiers, as well as some tips to help make life a bit

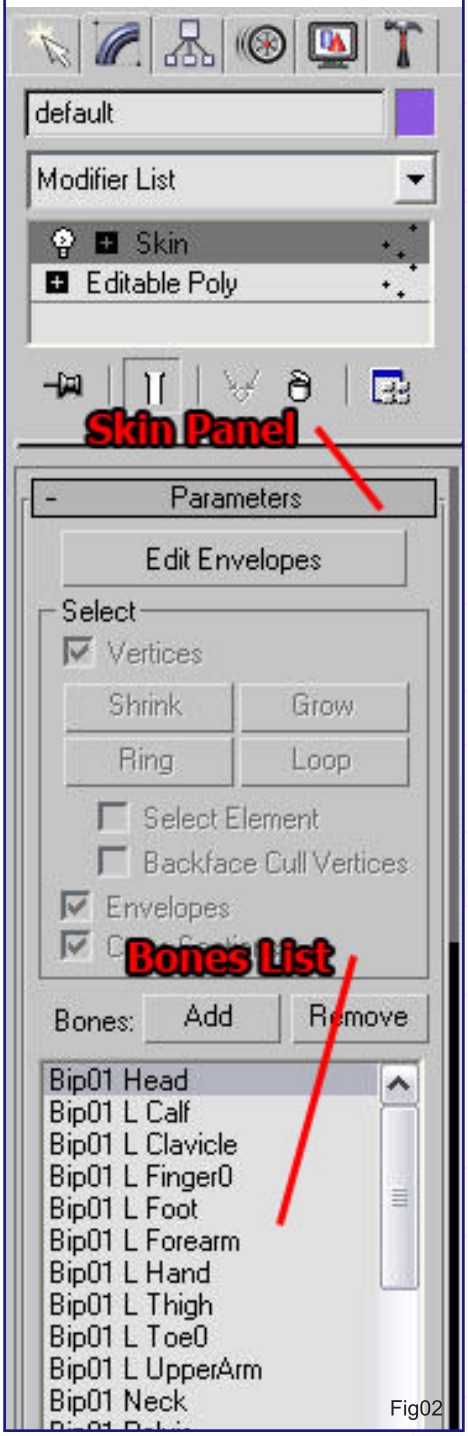


Fig02

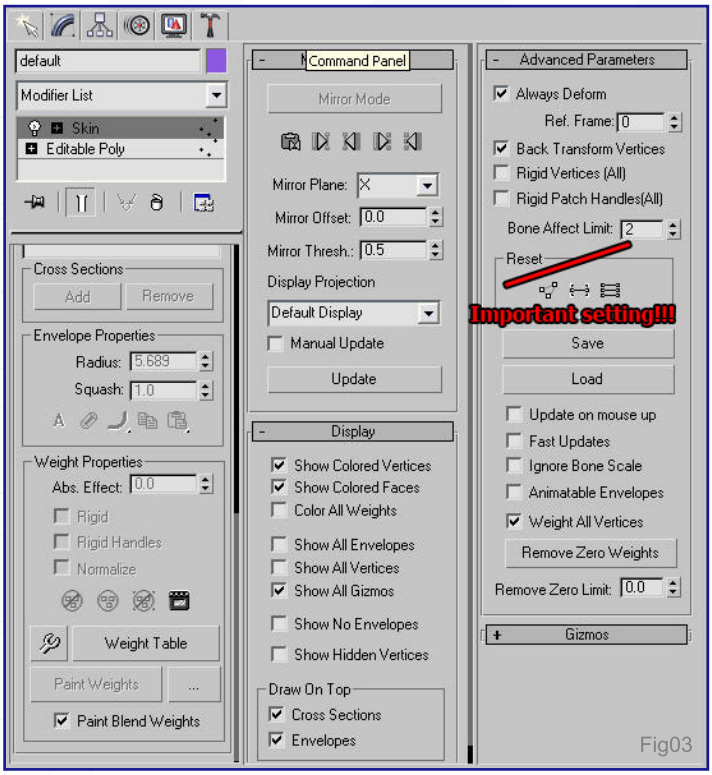
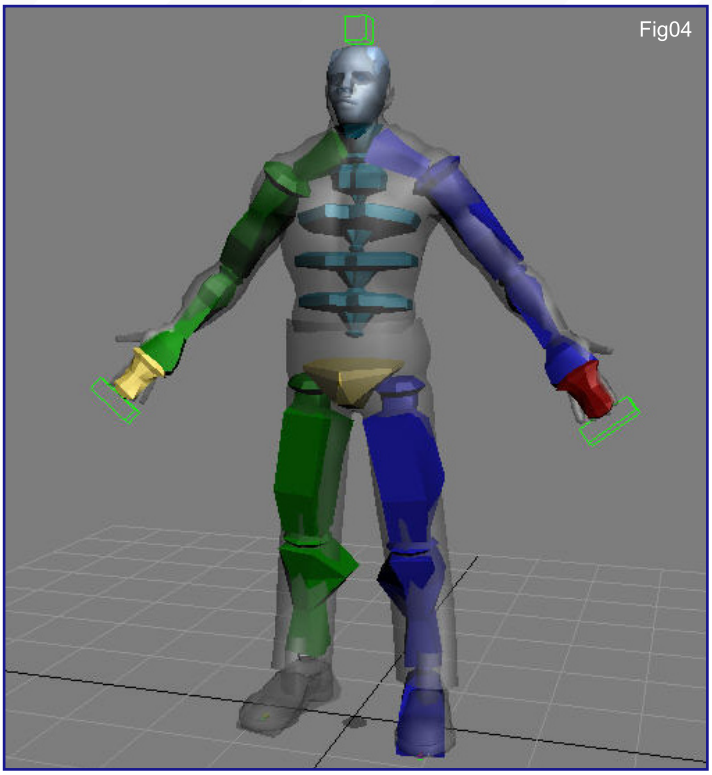


Fig03


Fig04

easier when getting the biped to conform to your mesh better. Bare in mind that the more complex your base mesh, the more difficult it can be to a skin modifier. So I would advise starting with a fairly simple mesh so you can both get used to using the modifiers and biped, and also to build your confidence using them. Now is probably a good point to remind you that with biped, as with any rig, even if you're only posing, your topology (or edge loops) are very important to how the deformation will take place and the quality (as well as ease of setup) of the final pose or animation.

Fitting the Biped to your Low-Resolution Mesh

My main tip when fitting your biped to your mesh is to make sure that each bone is about ¾ of the size of that part of the mesh (Fig.04). If that sounds confusing don't worry, as I'll be including some images that will make this clearer. The first thing you want to make sure, when you import your low-resolution mesh into 3DS Max, is that it's facing in the correct way. Also, if you're going to be importing an animated character with normal, diffuse etc. maps on it, ensure that your scale is set correctly for the game. With your low-resolution mesh set and positioned correctly in the very centre of your grid, I personally find it useful to make sure the soles of the feet of a character are set on the grid itself, but that's a personal preference. With nothing selected, you're going to have to draw your Biped on to the scene (Fig.05). Remember that when you draw your biped you will be drawing it with the soles of the feet fixed at the point you started to drag it from. Make sure the height is correct for your character and don't worry too much about limbs being in the wrong place etc. We'll be sorting that out in a minute,

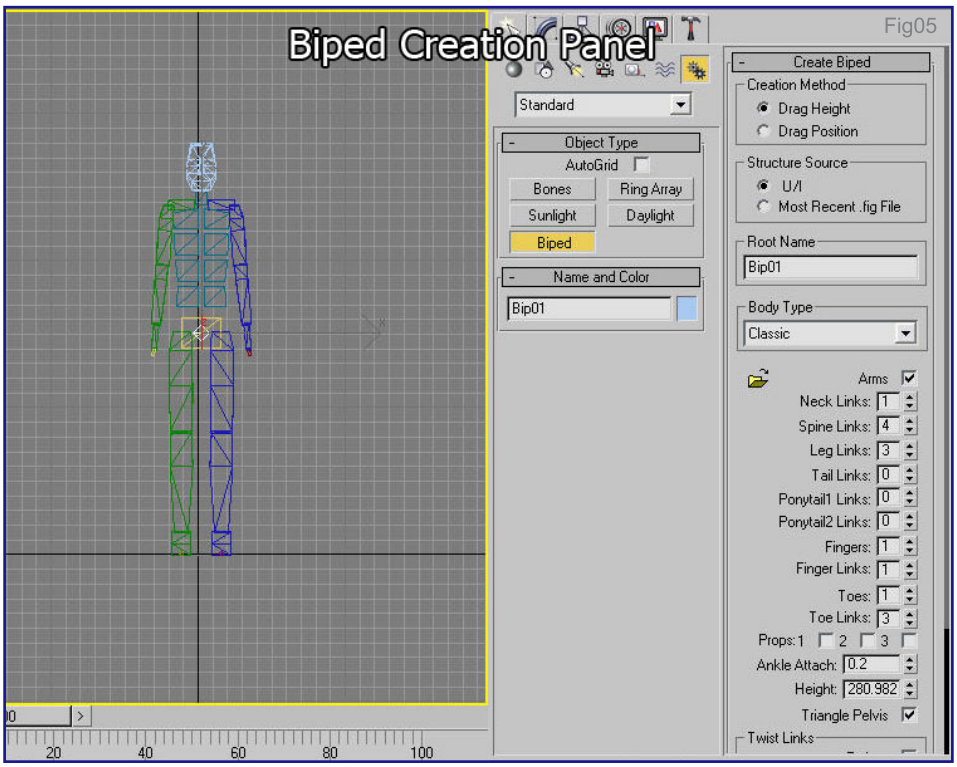
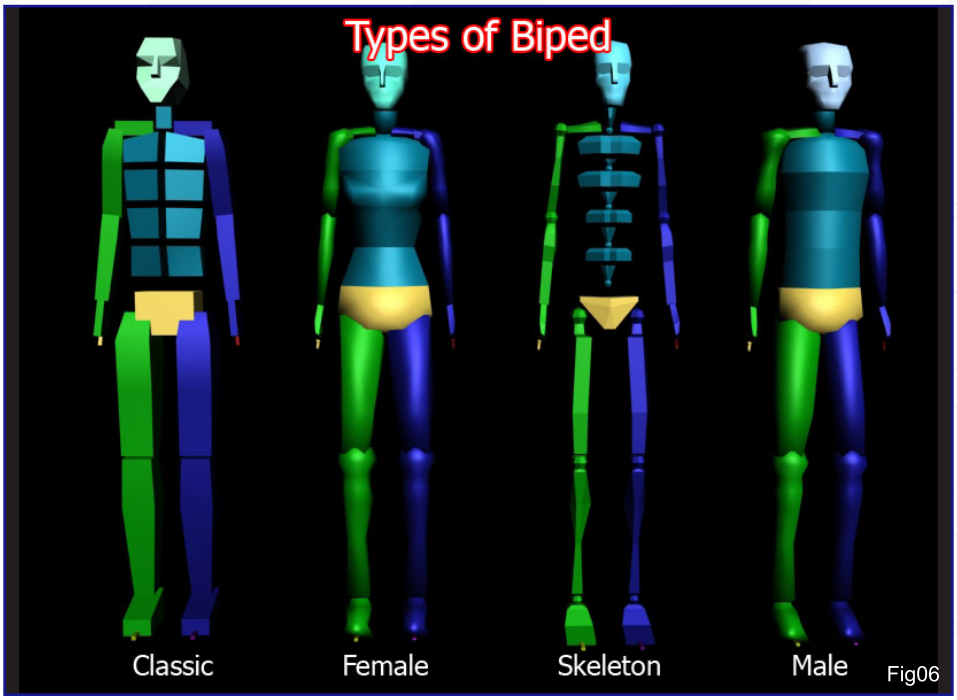


Fig05

so for now just get used to dragging your biped the correct size. Now would probably be a good time to discuss the options, within biped itself, that affect the look of the biped etc. Let us look at how to change the 'look' of the biped. I find some of the included 'versions' are easier to work with than others. Although the biped is still exactly the same and it's only the 'look' that's changing, you may want to try some of them out (Fig.06). There are 4 different 'Body Types' of biped available from the biped creation section in a drop-down box. The four types shown from left to right above, are; Skeleton, Male, Female and Classic. Normally I use either the skeleton or classic biped, but it really is up to you which one you find the best layout for your model, and the purposes you're going to use it for. Like a lot of things, when learning to use 'biped' it's a matter of spending time getting used to it - the more you use it, the more you'll find it becoming easier and easier.



Fitting Biped to your mesh

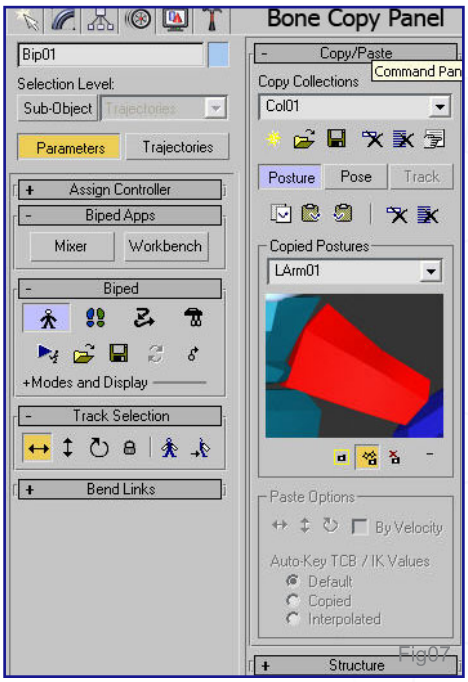
There are a few things to bear in mind about your base mesh before proceeding. Firstly, your edge-loops (or lack of them) will vastly affect the final quality of your biped rig. If your loops are incorrect, the deformation (and setting up) will be a much more painful experience. Once you've drawn out your biped to the same size as your mesh, and have positioned it roughly in the right place so that the groin area lines up roughly, we can move onto fitting the biped to your mesh correctly. What we're going to do, so that biped and skin work easier and better, is to make sure each bone is about ¾ of the size of the part of the mesh that it will be influencing. This means that you won't have to do as much hard work to skin your model. The biped control panel that we'll use to set up our model, so that it has the correct parts we'll need, is shown further down. On my rig, as I don't need a full hand setup for the pose I have in mind, I'll not be adding all the fingers and thumbs (although your own requirements may be different). To get to the biped panel first, bring up your item list and select 'BIP01' and go to your motion panel. To enable us to scale the parts and rotate them into position, you will want to make sure the button with the little man on it is pressed. When we start to pose or animate, we'll depress the 'footsteps' button instead. If you select your main mesh and press Alt + X, you will go into see-through mode that will enable us to work better. Normally, I also have it set to edged mode in the view pane as well. This enables me to be able to see the vertexes that I'll need later. It is now a simple matter of working down one side of your skeleton, scaling and rotating each bone into place. I usually find that putting the transform tools into 'local' mode makes this a whole lot easier. Assuming that you are already, or at least vaguely, familiar with 3DS Max (otherwise you wouldn't be reading this tutorial), for the sake of brevity I shall assume that you already know how to do this. Once you have the mesh lined up along one side, we can mirror each bone to the other side by selecting it and doing the following:

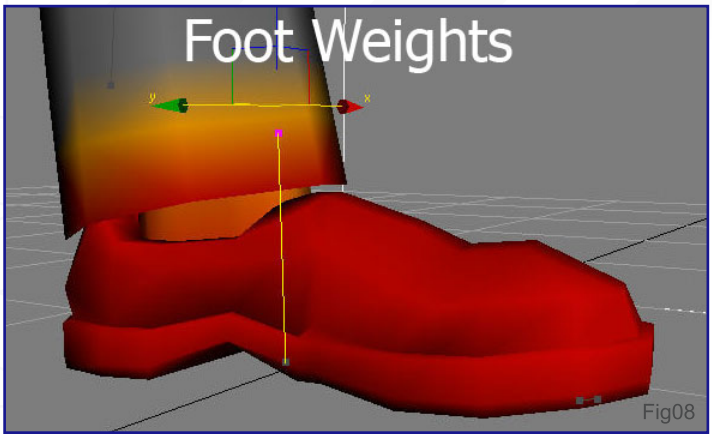
1 - Select the bone you wish to mirror to the opposite side;

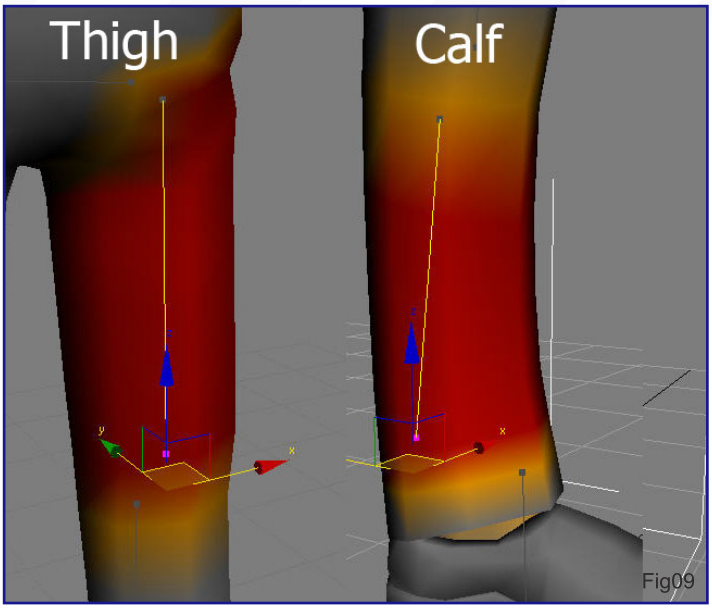
2 - Open up the 'Copy/Paste' section of the biped/bone panel over in the motions section (it's easier to look at the image below to see where I'm talking about as that last description is a little confusing);

3 - For the 1st time, make sure 'posture' is selected and that you've hit the little yellow star once. Click the 'copy posture' icon and then the 'paste posture' button. This will copy that particular bone's rotation, scale and transform data to its mirror opposite;

4 - Repeat until every bone is done in the arms and legs (Fig.07). Once we have the skeleton fitted to our mesh, and looking correct, we'll move onto skinning the mesh.

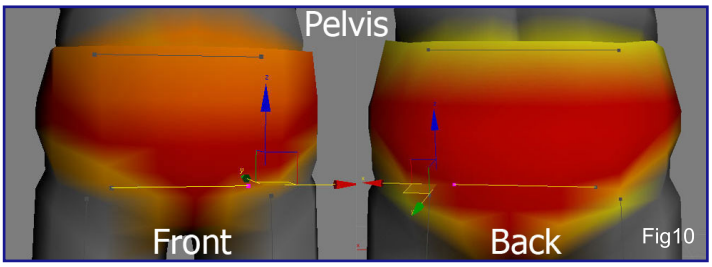


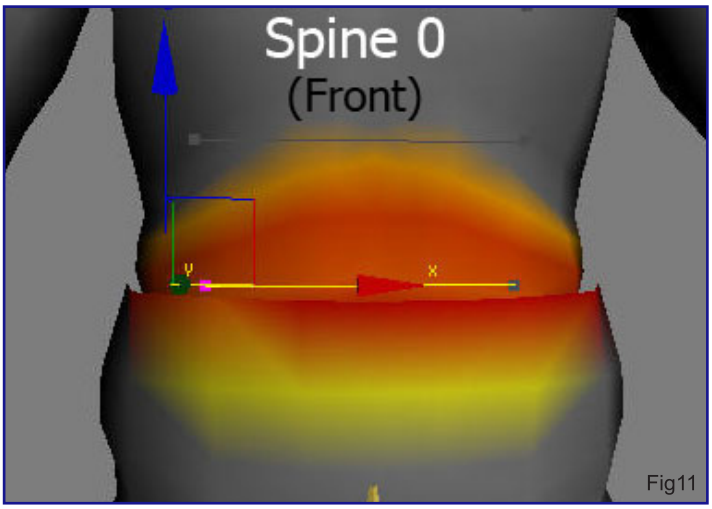


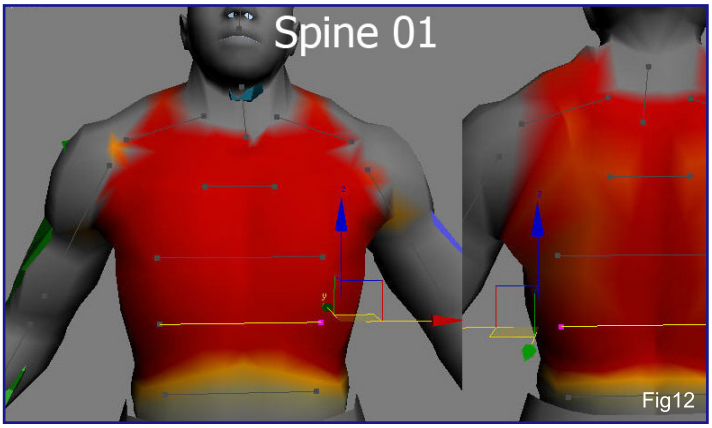


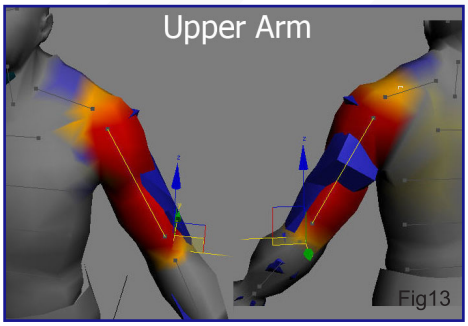
SKINNING THE MESH

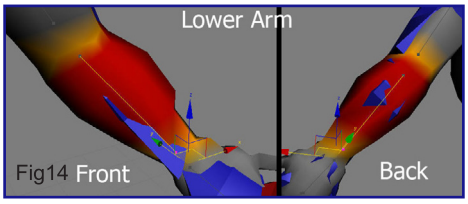
I'd like to remind you that if you wish to use your rig for anything other that a 'posing rig', you'll need to put in a considerably larger amount of time into the skinning phase. Adding 'joint angle deformers', 'bulge angle deformers' and even 'morph angle deformers' would all be really useful things to add. If you're taking your rig very seriously, you can also add some sort of muscle plug-in, such as 'SkinFX'. It is also possible to add IK to the biped in the same way, as if they were a standard rig, but that's beyond the scope of this particular tutorial (although, if there's enough interest in wanting to know how it's done, I'll write another tutorial on it). (Fig.08). So, to re-iterate, this is a simple posing rig that wouldn't cut it for a serious animation without longer hours spent on the skinning part. This is for use as a 'posing rig' only. With your mesh selected, add a 'Skin' modifier (if you wish to do a really 'quick and dirty' version of this rig you could use the physique modifier instead). There will be quite a lot of images in this section so that I can try and use them to show how I've weighted my rig. These are meant as a guide only as every mesh has different requirements, although the basics remain the same. You'll notice that on my rig I have no weight attached at all to Spine02 or Spine03. This has been done because it is only a posing rig so I had no need to weight those as well in this instance. Although, obviously, if this was a fully detailed rig for animation purposes, then I would have weighted those as well. If you scroll down this section, until you get to the box in the 'parameters' section, you'll see a button named 'Add' for adding your bones. Click this, open your list and select all your bones, except any ending in 'nub' as these usually aren't needed and only make for very unpredictable results in the skinning. If you're anything like me, the last thing you want are nasty surprises at this stage (Fig.09). So with our bones added, we can now start the main work. Depending on how much time you have to rig your character for your pose (or poses) you may want to set the envelopes on your character before the next part. On the rig I did for this tutorial, I didn't bother and got the same result, so unless you have a particular need to, I'd move straight onto the next part (Fig.10). What we're going to do is, starting from the feet, work up one side of the body telling each bone what vertexes will be affected and by what amount.

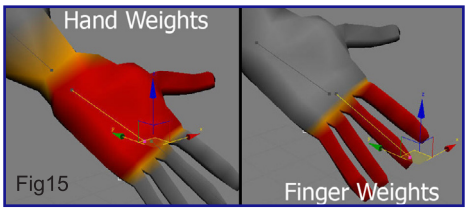


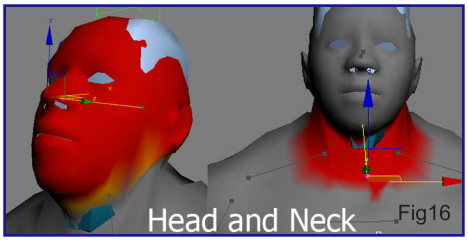


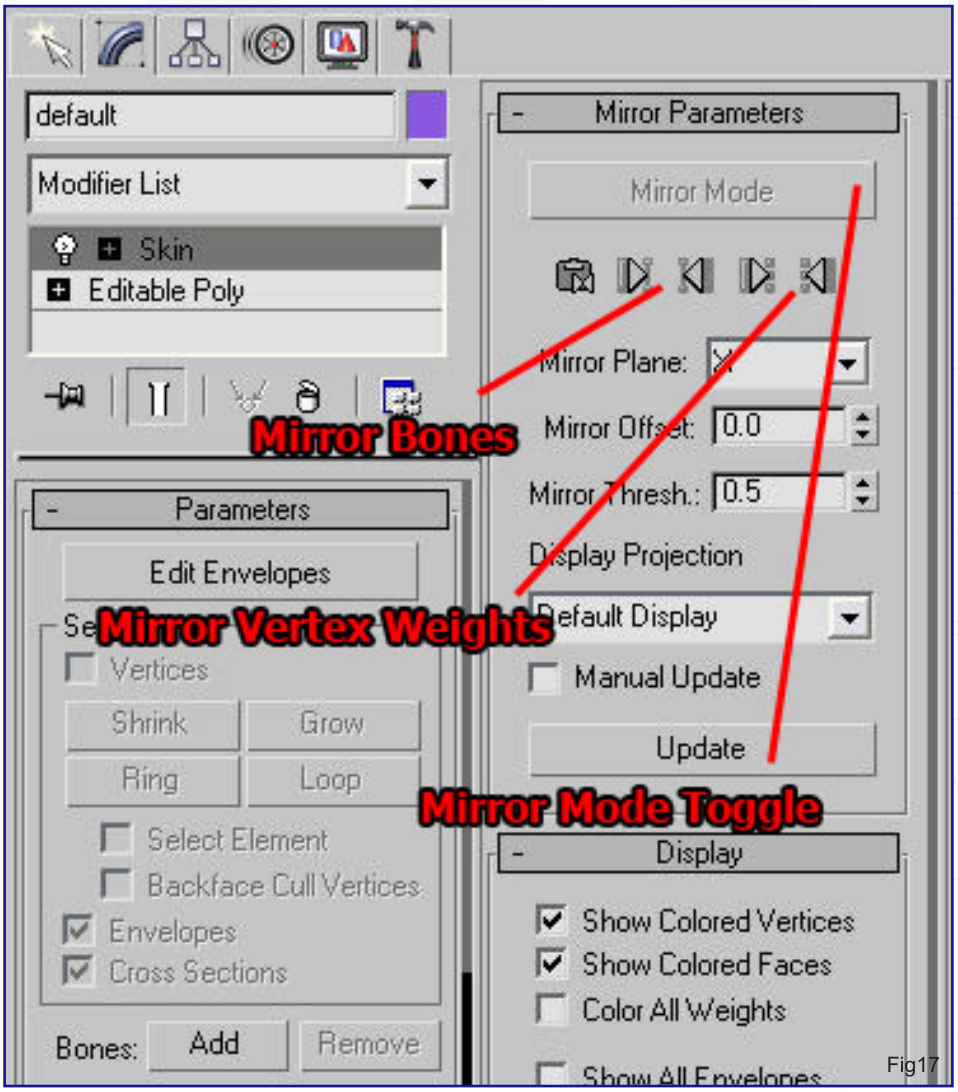








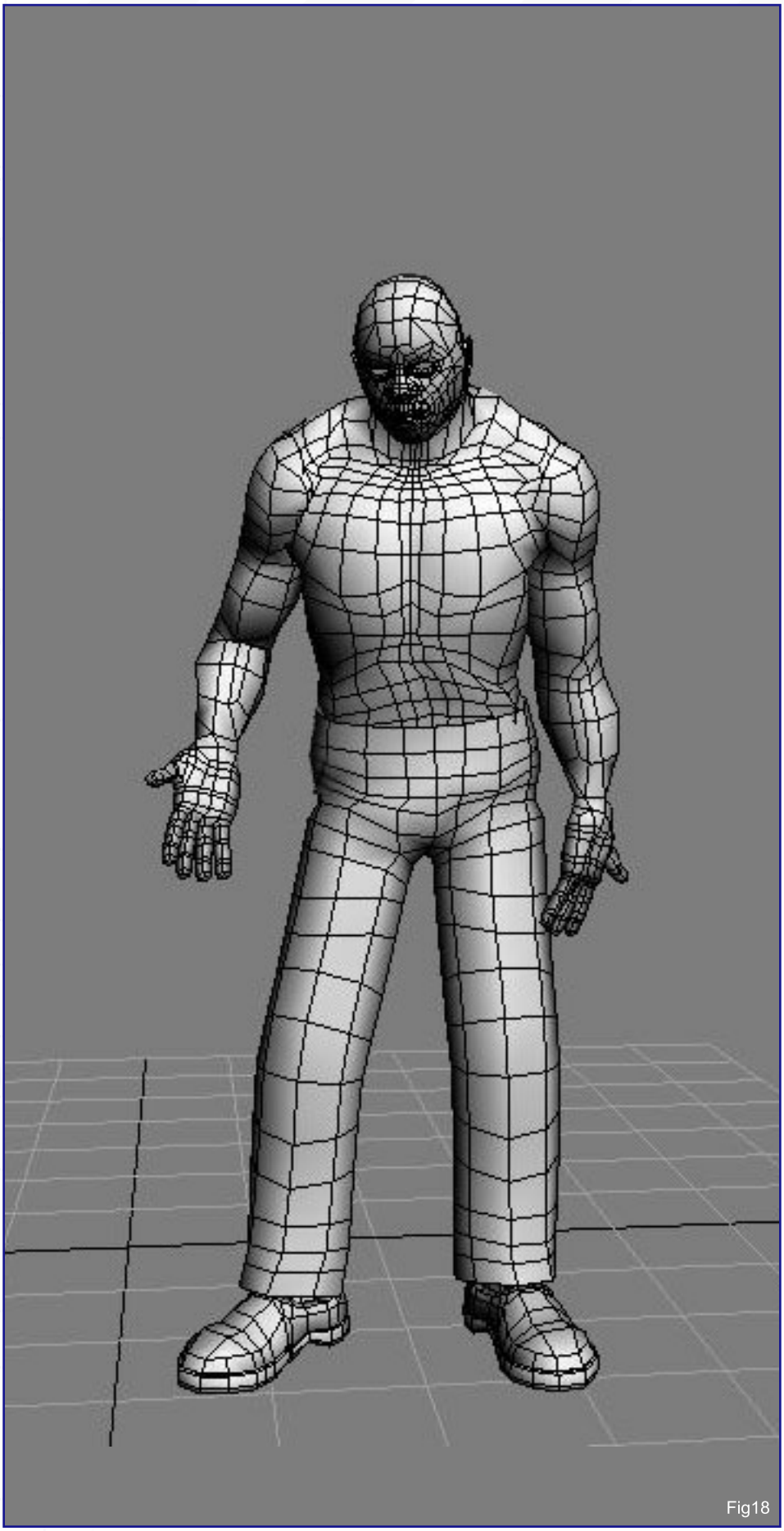




We'll need to make sure we have the lasso selection enabled as it's preferable to the other selection types in 3DS max for this job (Fig.11). It is a simple matter of selecting the vertexes that are going to be totally influenced by the particular bone, and then setting the influence to '1'. Then, moving to the vertexes that will be influenced less, (usually at the ends of the bones), set those to '0.5'. Working through our mesh like this, down one side, we'll get a rig that will have some problems but gives us a starting point for our vertex weighting in more fine detail (Fig.12). (Fig 13-16: Some images of the other weights.) Once I have worked my way up each bone, I then mirror by selecting each individual bone and going to the 'Mirror Parameters' section and highlighting. Firstly, you'll want to set the mirror plane to the correct way. You have a choice between 'X', 'Y', or 'Z'. In this section are buttons that enable you to copy both bones and/or vertexes, but as I've normally already mirrored the bones at this stage I only use the setting for the vertexes. Remember that the chances that your skin settings are correct the first time you set them are less than zero, unless you are very experienced at skinning. So don't be disheartened if your mesh 'explodes' in places during your test animation in a minute (Fig.17). You may need to go back and refine your vertex weights a few times until you get them to behave in the way you want them to. There's no way to explain how this works to cut down this experience, it's something you get better at with time I'm afraid. So you'll need to revisit this section a few times, most probably the first few times you do it.

POSING YOUR MESH.

There are two ways to pose your mesh; by hand, which will be a little "un-intuitive" as the rig doesn't have IK at this stage, or the way that I sometimes use if I'm in a hurry (although, not for this tutorial) is to import a BIP mocap file and pick a pose from within that. This has the added attraction that the pose will look incredibly natural if your rig has been skinned well, and also it's a great way to find any problems in your rig. Bare in mind what you actually need your pose to be and what part of the mesh is going to be seen. If for example you are doing a face on shot, where the back won't be seen, you won't need to worry too much about skinning in the back area. If however it's something that you'll want to put in a turntable on your demo reel, you'll

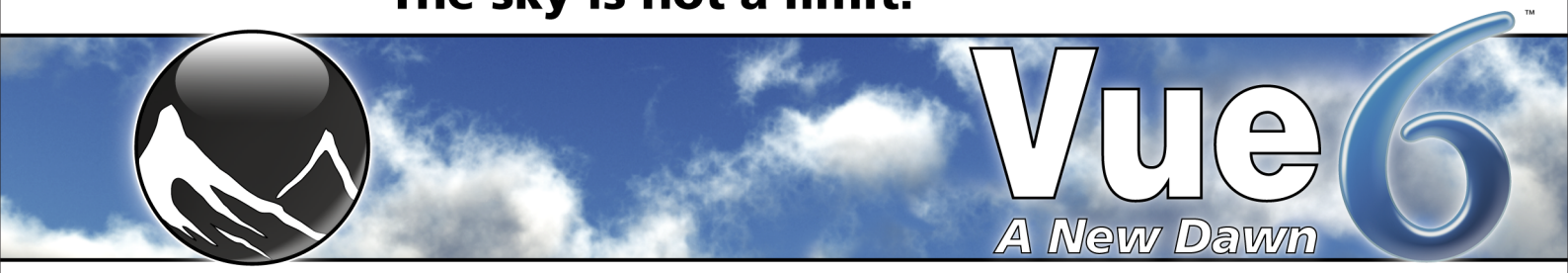

Fig18

need to make sure it looks well in it's pose all the way round. Select your 'BIP01' from your list again and go to the motions panel. Click on the footsteps button and you are now ready to either pose or import a BIP mocap file. To import a mocap file, go to the folder icon and use one of the many that come with 3DStudio Max (there are also a few free ones on the Internet as well if you wish to use something less generic for your model). Now play your animation and see how it looks (Fig.18). There will undoubtedly be a few things wrong at this stage that you'll need to go back and fix. There will probably be vertexes that are weighted too much, whilst others are weighted not enough. So keep redoing your skinning until it looks right to you, for what you need it for. A word of caution: just because your rig may look perfect with one mocap file, does not mean that if you load a totally different one it will still look perfect! Another file with different movements may highlight a whole new set of problems (this is also a great way to test out your rig if you really do need it to be perfect, by the way). Once you've picked a pose you can import it into Zbrush as your level 1 model, over the existing one, providing that no vertex numbers have been changed, and simply re-model any parts that look odd due to the pose being different. This is usually a simple and rather quick process. If you're using another application for your sculpting, you may wish to hold off your sculpting until after it's posed, or even just apply displacement or normal maps to your posed model in 3DS Max and render. This should give you a good start on rigging, using biped for posing. Once you've done this, you may want to move onto more extensive rigs that give a more anatomically correct animation. Good luck!

Wayne A. Robson

For more from this artist visit:
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REVOLUTION

In this Making Of you can see how Zhang created his half-man, half-machine masterpeice, ‘Revolution’, using Maya and Photoshop...

REVOLUTION

CREATED IN:

Maya

This character was modelled in Maya, using the low polygon modelling process. Firstly, I modelled a standard human body, spending much time on his topology structure because I will need him to pose a highly difficult gesture at the end. The teeth, eyes and hair, all require great patience (Fig.01). The blue arrows indicate where you need to be careful when modelling (Fig.02a-g). Following all this, it's time for the aircrafts and the details in the foreground. I must say something regarding the city; because I will use matte painting to do it, I don't need to model it too seriously, just like a real city (Fig.03).

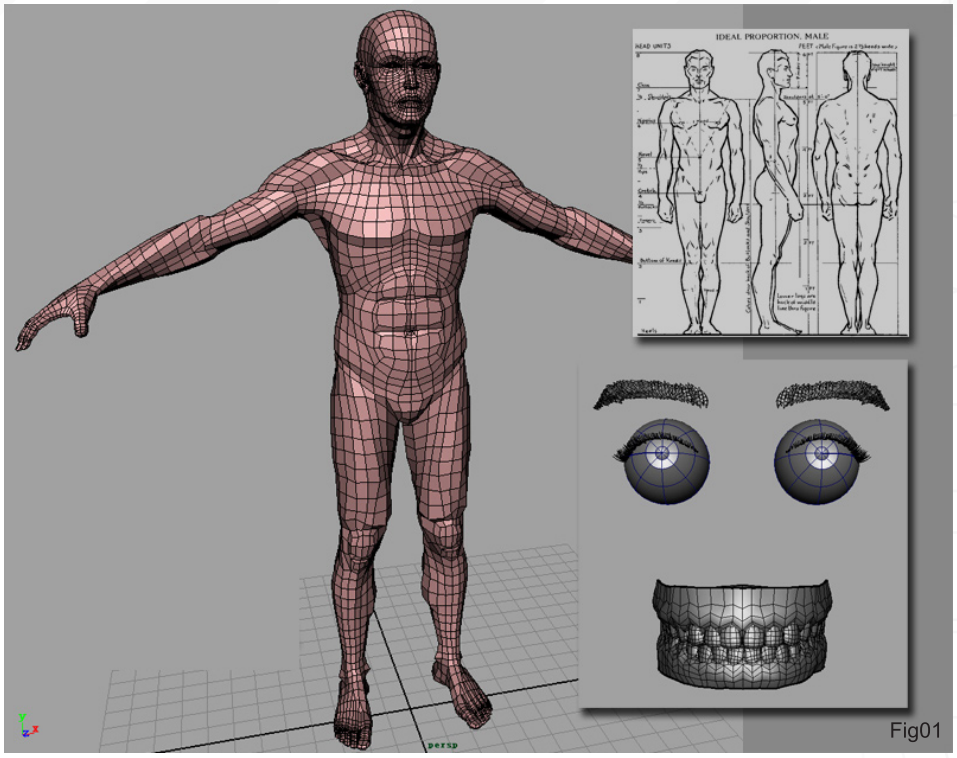
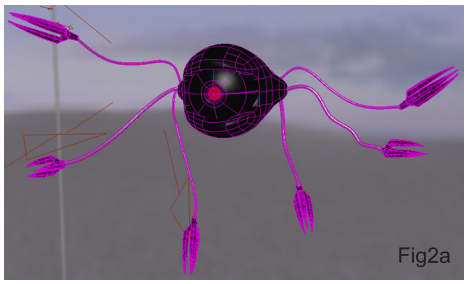
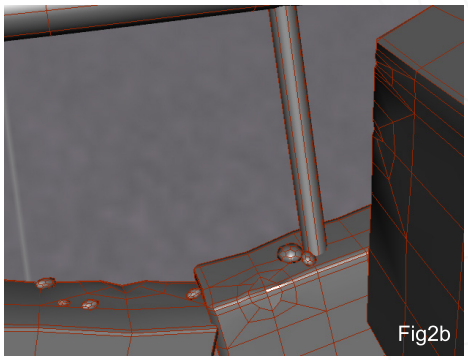
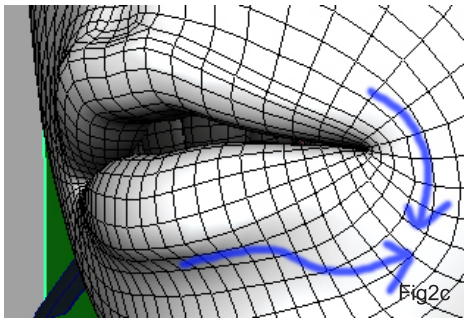
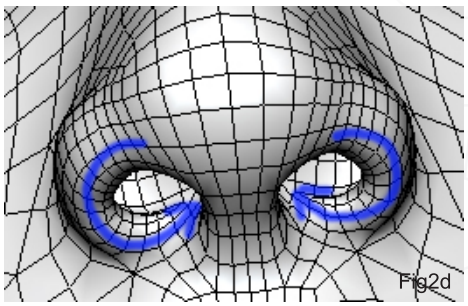


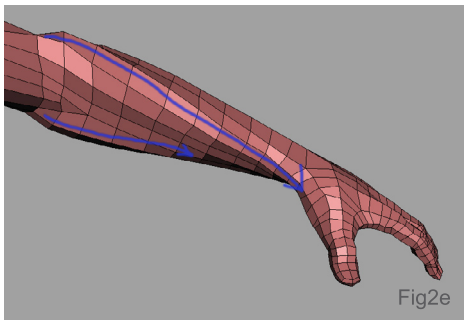
Fig01

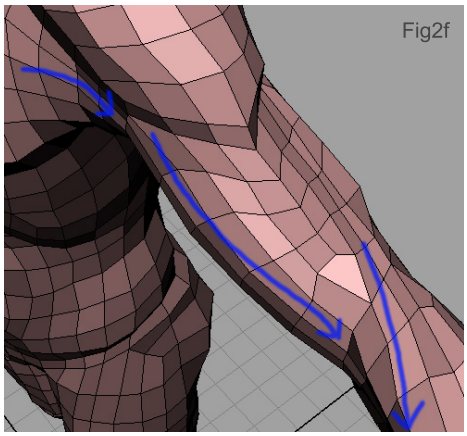

Fig2a

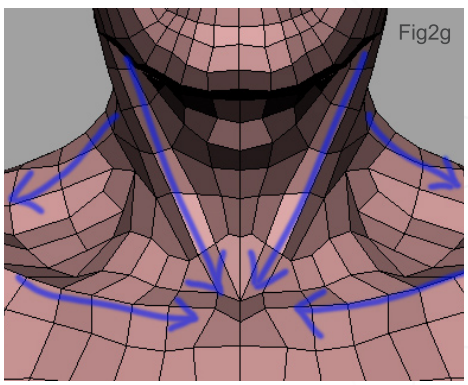

Fig2b

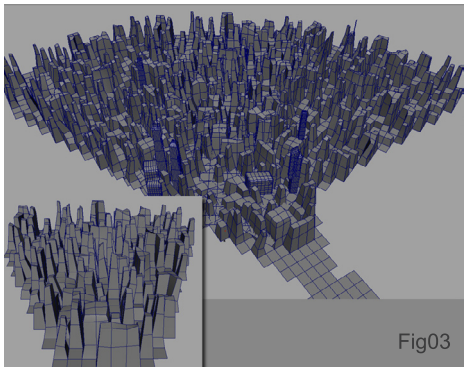

Fig2c


Fig2d


Fig2e


Fig2f


Fig2g


Fig03

UVs

This character was made for an illustration, so I didn't set UV according to the normal method. I simply let the parts which can be seen take up more UV space. The UV of the other things are nothing fancy (Fig.04).

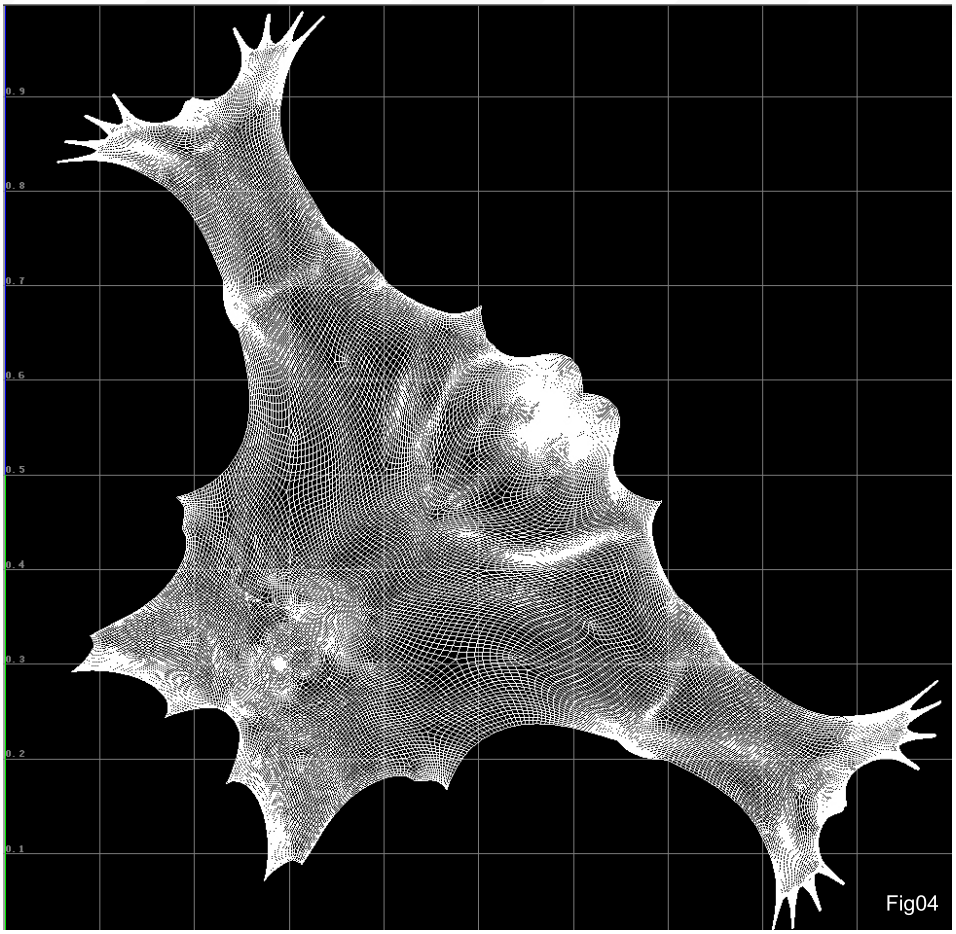


Fig04

Skin Shade

Someone once asked me how to connect Mental Ray 'Fast Skin Shade'. Everyone has his own way. On the whole, in my opinion, I think it's best to control every parameter as best as you possibly can. Therefore, I used about 10 maps to control the more important parameters (such as Diffuse Colour, Epidermal Scatter Colour, Subdermal Scatter Colour, Primary Weight, Secondary Weight, and so on). My own experience is that the 'sss' effect of some places, like ears, can't be too high - that is, not being too reddish - because a real man wouldn't be like that. We need the feeling of the skin to be between plastic and wax. Because I used the HDR to illuminate, I must click 'Include Indirect Lighting' in the light map node (Fig.05 & 06).

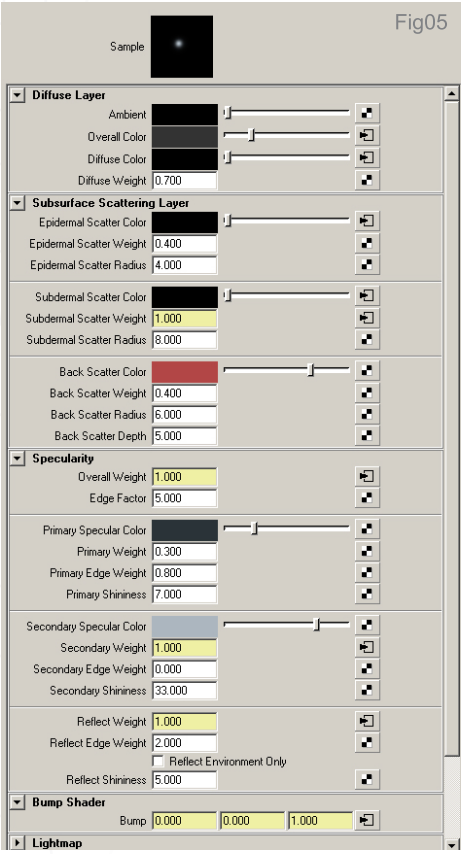


Fig05

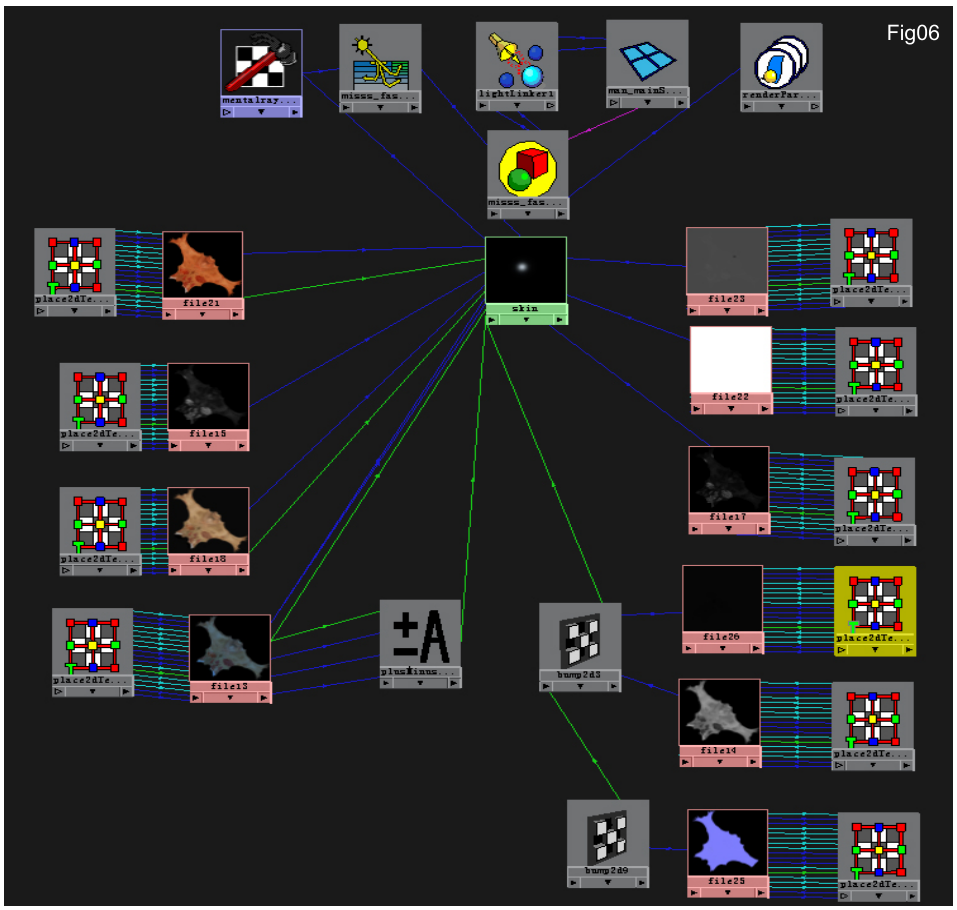
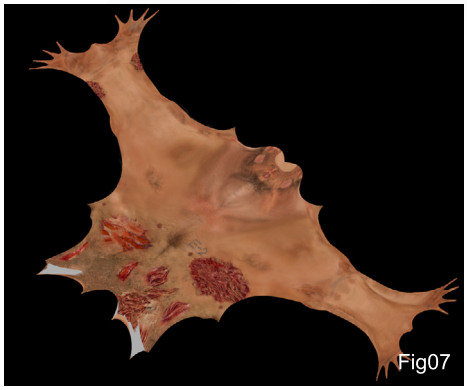
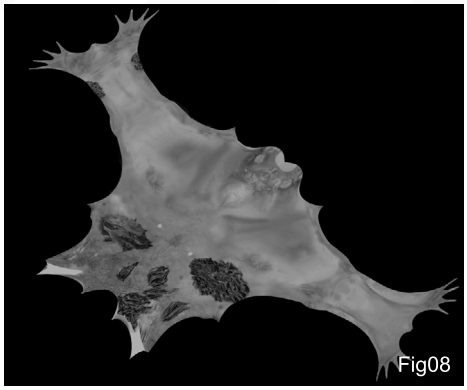
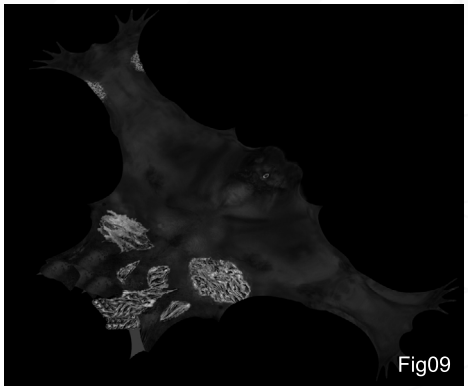


Fig06


Fig07

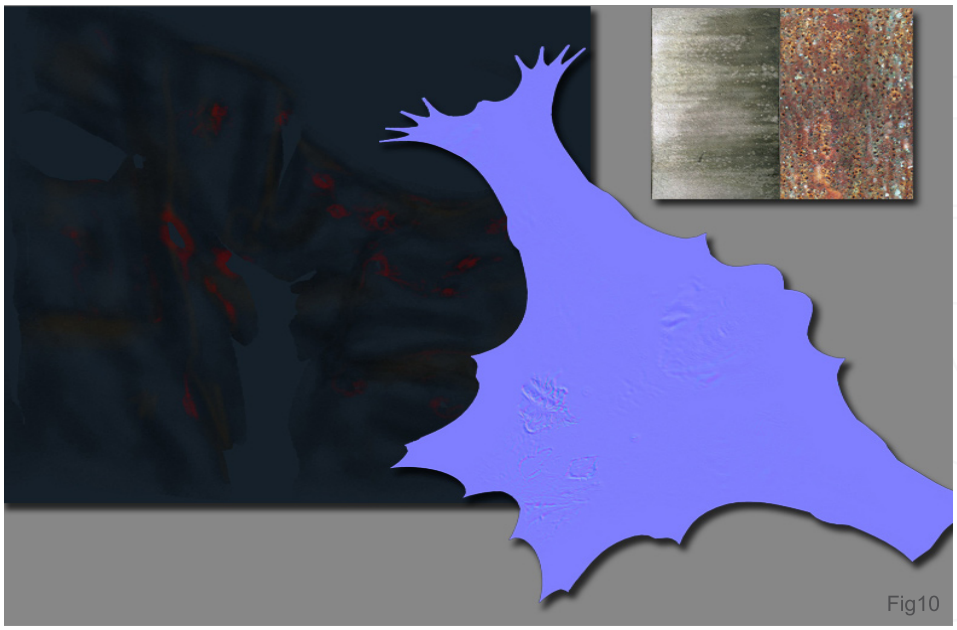

Fig08


Fig09

Texturing

For this image, painting the texture is a complicated process. Basically, most textures of this character are 4096x4096 in size. First of all, I did the colour map by hand-painting and using some photos, then desaturated the colour and made the bump map and specular map afterwards. I changed the tone and details of the colour map, as the Epidermal Scatter Colour, Subdermal Scatter Colour, then changed the specular map as the reflection map. I got a very detailed normal map in Mudbox, by a high-resolution model which included about 5-million polygons. I wanted to let the scene look worn and real. Then I used body paint to remove texture seams and added more bloodstains and dirt - I like all the small details.

Fig.07-09 show the colour, bump and specular maps. Fig.10 shows the normal map and trousers.

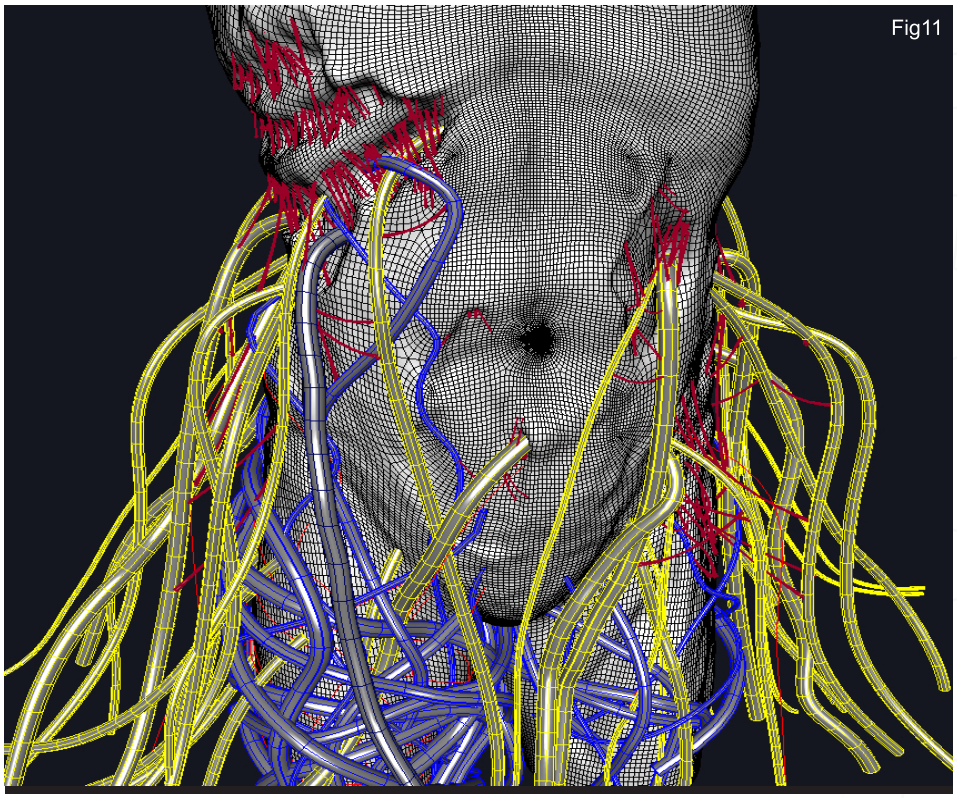

Fig10

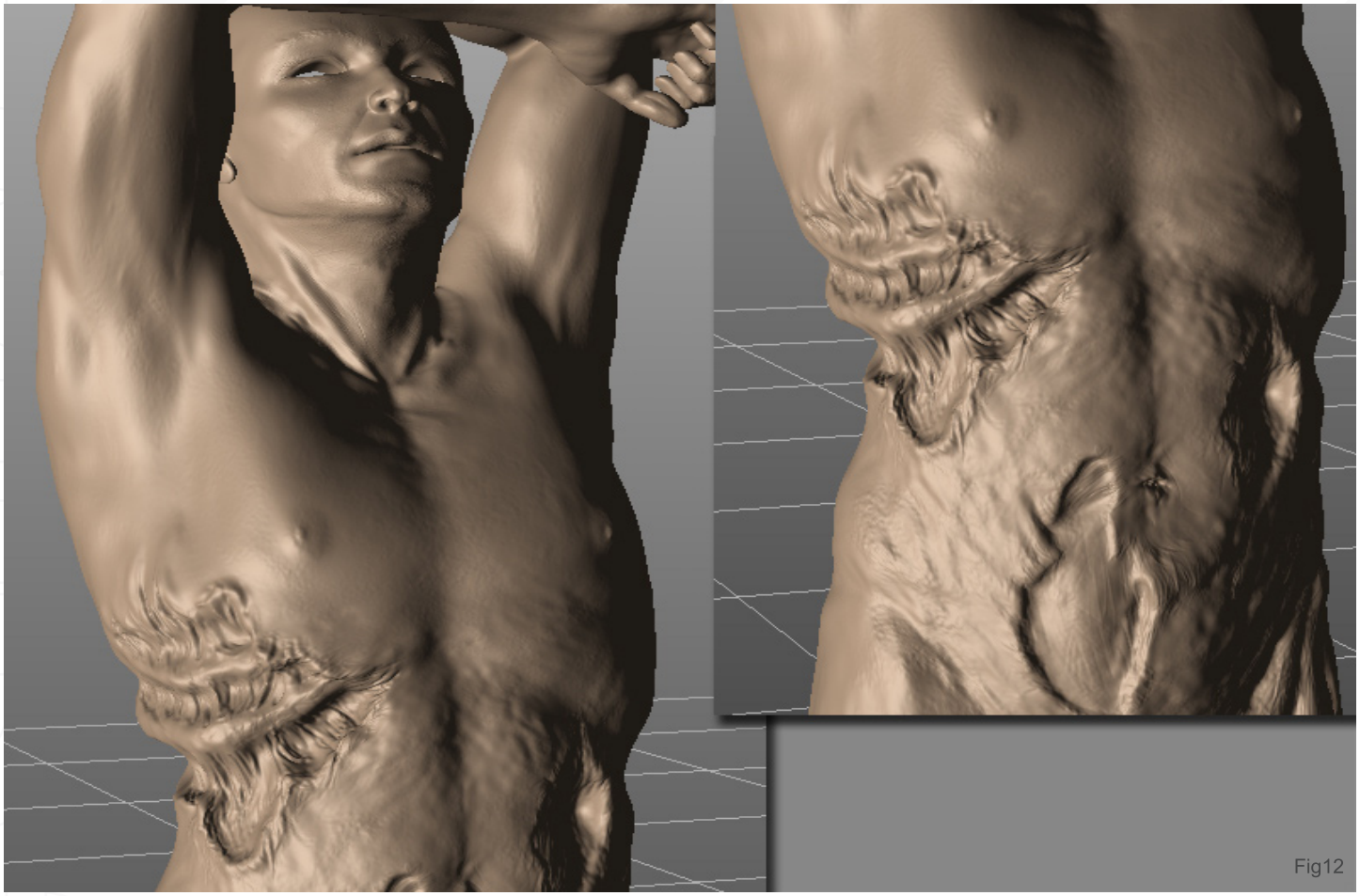
Pose Layout

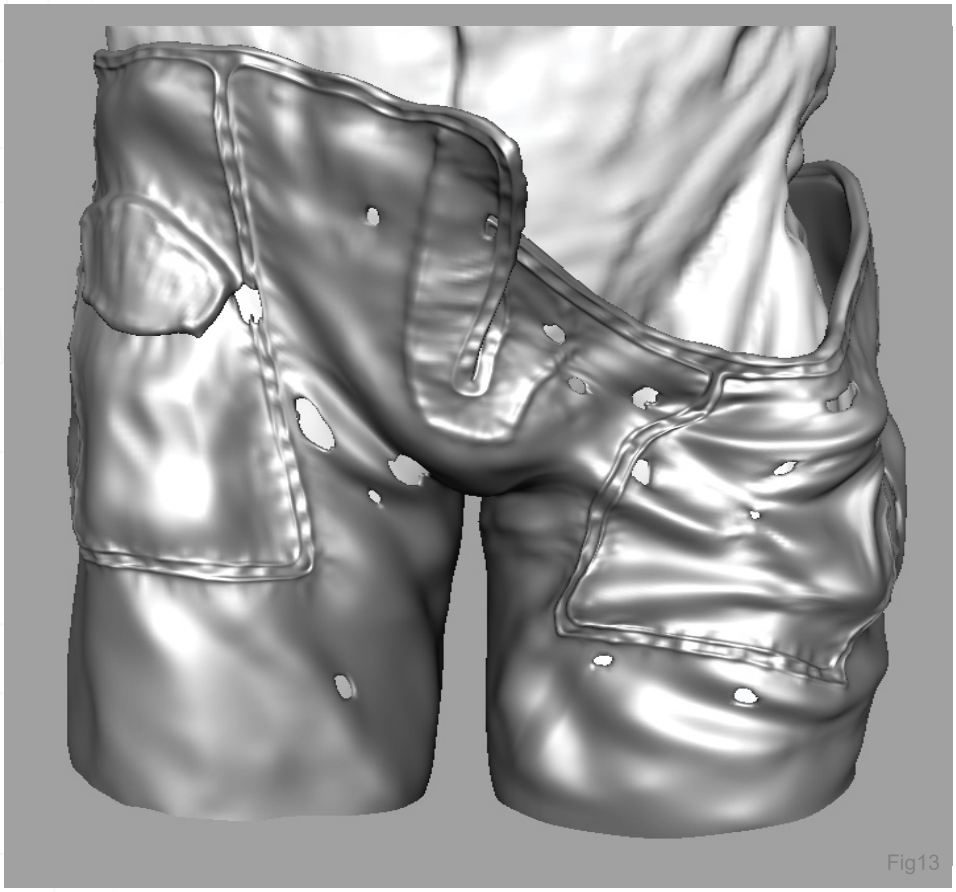
In this step, I bound the character, posed him, put in all the aircrafts and objects - generally making them look like my own design.

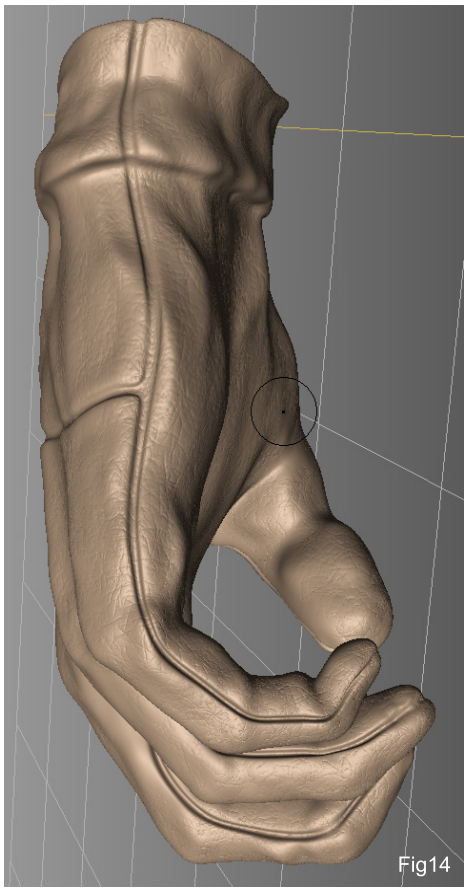
Remodelling

After the layout, I began to model the high-resolution poly (this step almost made me crazy). I adjusted the body feature in Mudbox. I then finished the high-resolution poly human-body model, and imported it back into Maya. I then constructed many tubes, which are just NURBS. Attention must be paid to their disordered positions and where the blood vessels are also coming out, so it was just


Fig11


Fig12


Fig13


Fig14

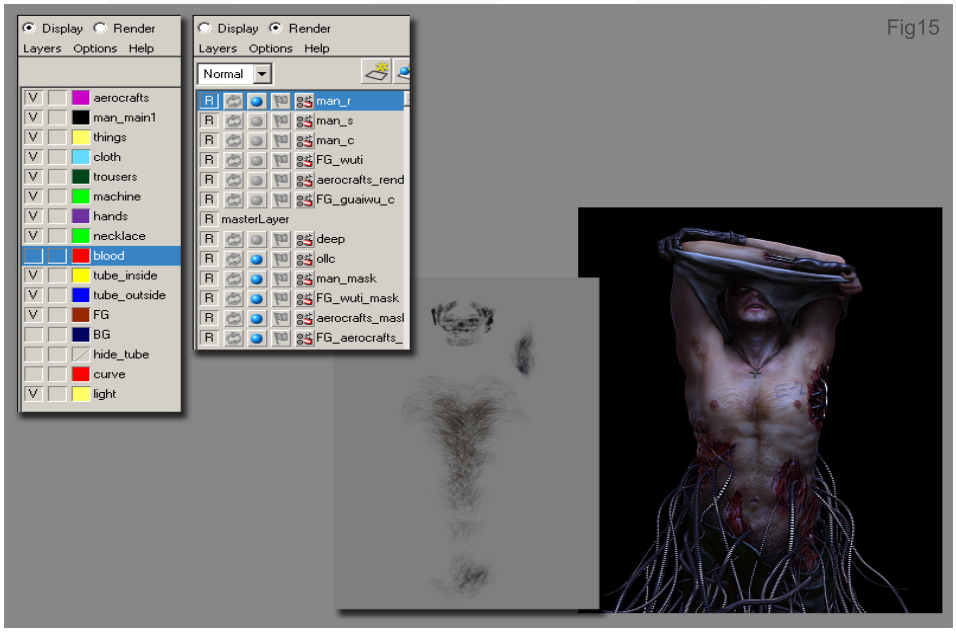
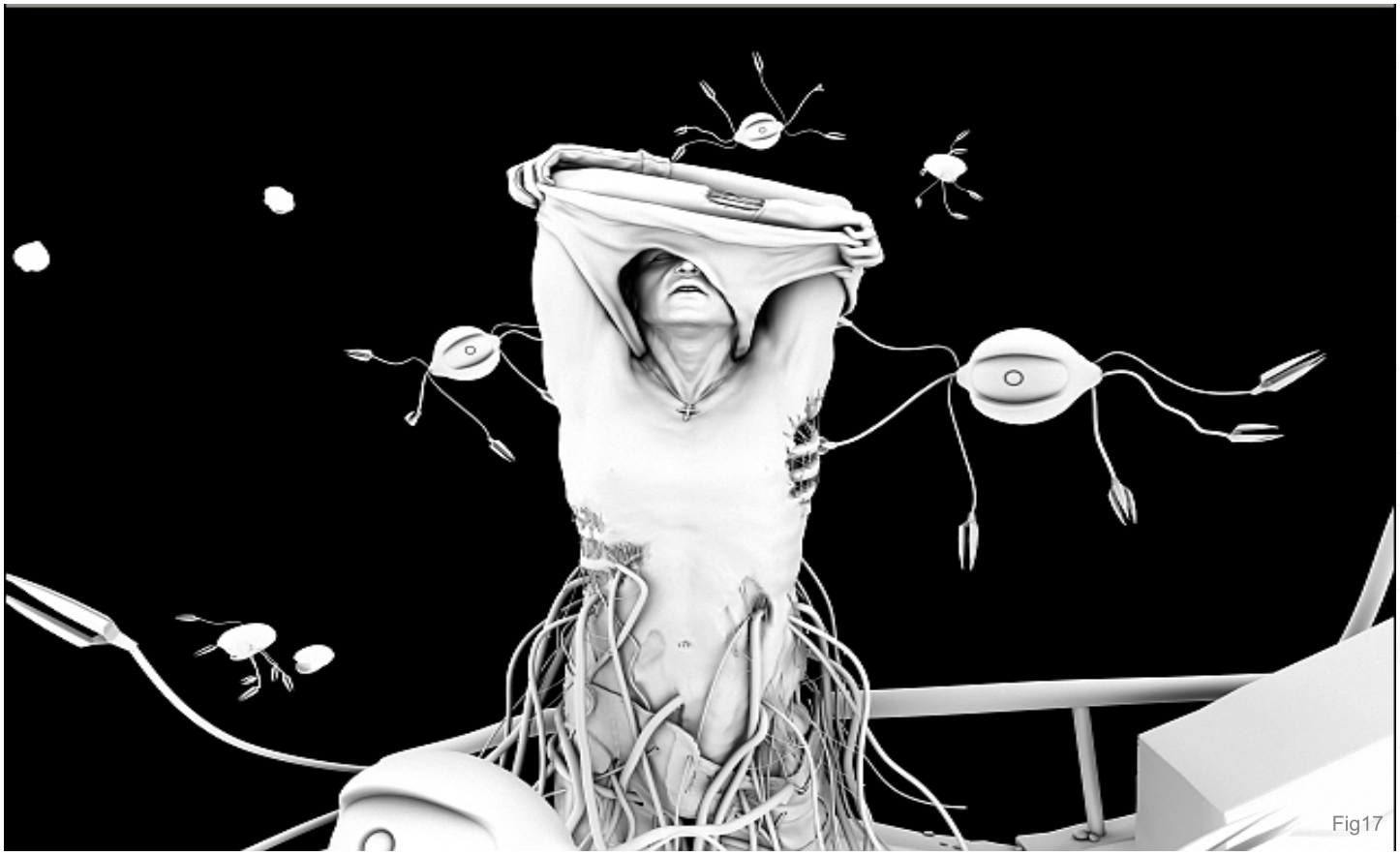


Fig15


Fig16


Fig17

endless placing and modelling. Then I modelled the clothing, gloves and trousers (Fig.11-14).

LIGHTING

I used Mental Ray IBL with an HDR picture and several lights for a special purpose. There are two primary light sources; an aircraft spot light above the character and the huge area light source in the background.

HAIR & BODY FUR

I finished the body hair and “fur” using Paint Effects, of course using ‘fuzz’ (if you can see them).

RENDERING

I rendered the image multipass, which allowed me to easily modify and control them. The final image size is 3500x2500. Fig.15 is the diffuse layer and body fur layer. Fig.16 & 17 are the occlusion layer and deep layer. Fig.18 & 19 are the reflection layer and specular layer.


Fig18


Fig19

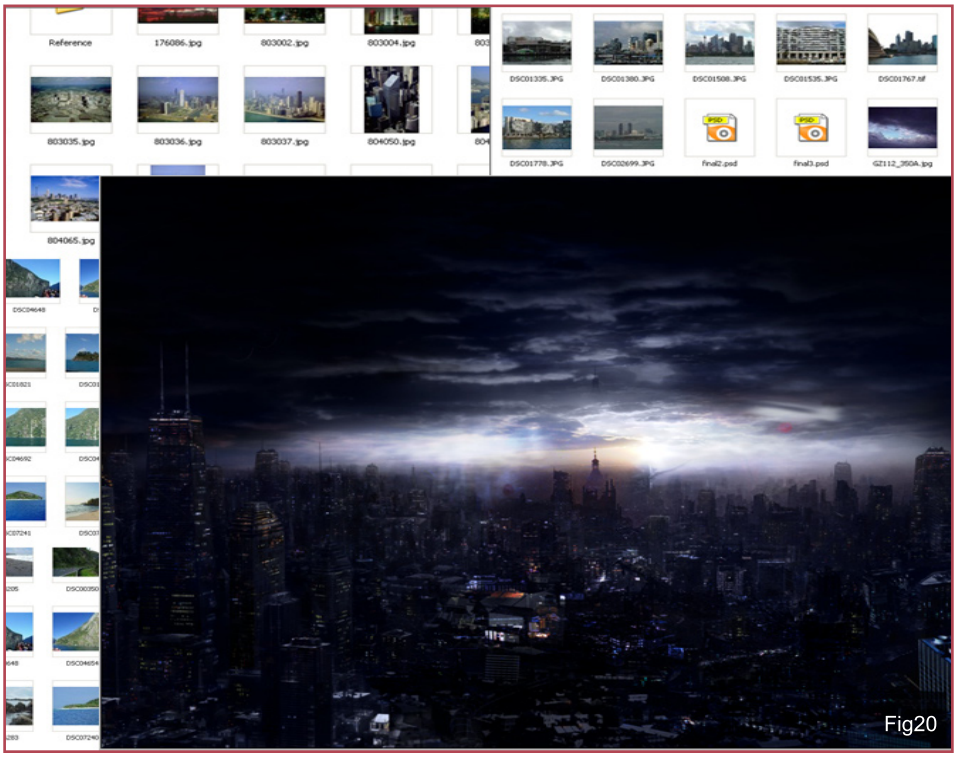
I exaggerated the effects for you to see.

MATTE PAINTING

Because this is not a tutorial for matte painting, I won't say too much about this step. I simply constructed the city in Maya and rendered the deep map, ambient occlusion map, and atmosphere map. I then used the photo references, which came from the Internet and digital pictures taken by myself, to complete the city in Photoshop. This is the complete background. I'm not worried about the areas that are covered by the character, so I am quite satisfied (Fig.20).

COMPOSING

I put all the passes into Photoshop and made use of my skills to get them work together better.


Fig20

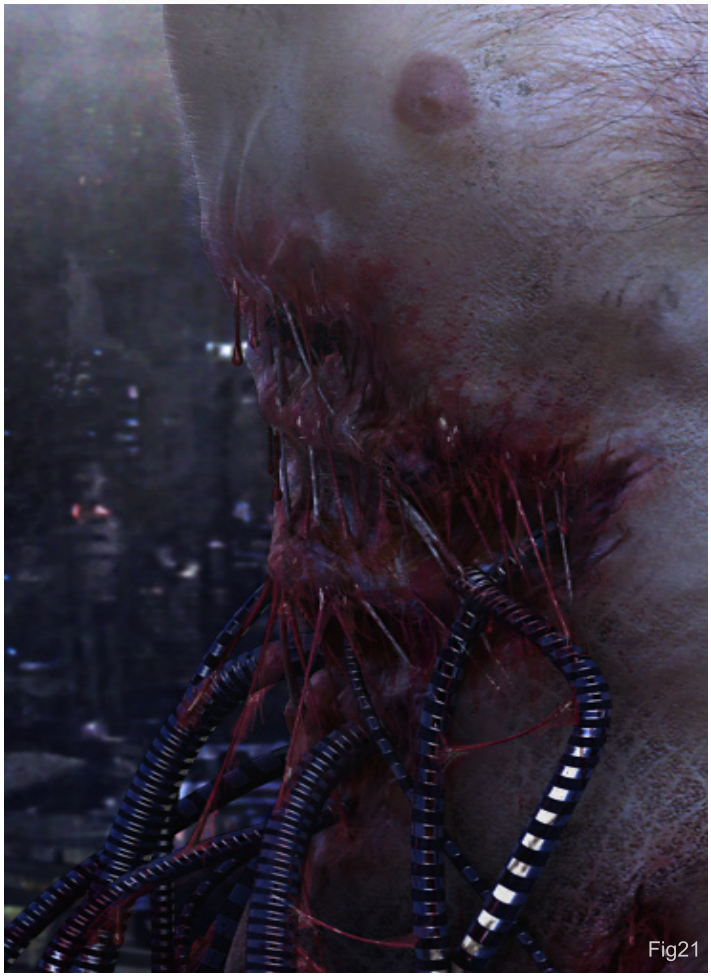

Fig21


Fig22



EFFECT

Add the effect in Photoshop, such as lens effects, light fog and noise effects, and adjust the layers.

Fig23

Refining

At the end, I refined the image, concentrating on things such as the micro-blood vessels and the beard (Fig.21 & 22) and details of the aircrafts and the foreground (Fig.23 & 24).

Finishing

Fig.25 is finally finished. I hope you have enjoyed this tutorial. If you have any questions or comments, please email me. Finally, I would like to thank my parents, my girlfriend and my friends. I also want to thank 3DCreative Magazine. (If you want to see the high-resolution image, visit CGTalk on the link below.)

Zhang Yang

For more from this artist visit:
http://forums.cgsociety.org/showthread.php?t=432057
Or contact them:
zhangyangshaoyu99520@hotmail.com



Fig24



Fig25

BOXX



Image courtesy of Olivier Derouetteau, http://olive2d.free.fr

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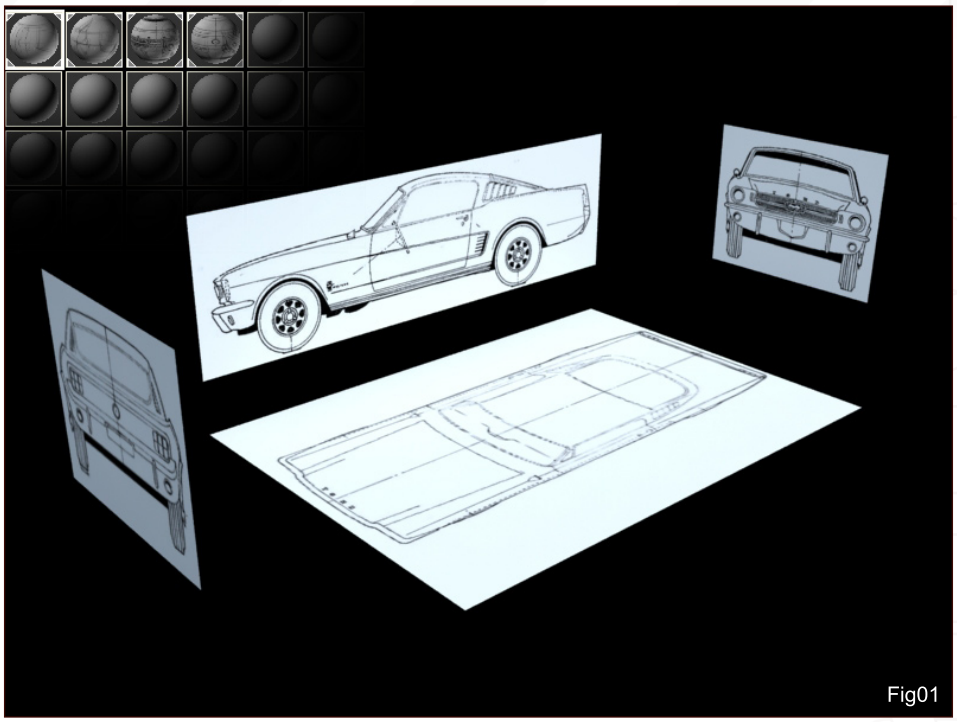
We take a brief look at the creation of Zdenek Urbánek's 1965 Ford Mustang. One of the best car renders to grace the 3DCreative Pages...

MUSTANG

Created In:

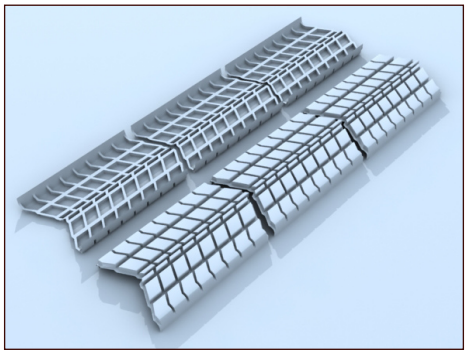
3DS Max 7, Adobe Photoshop.

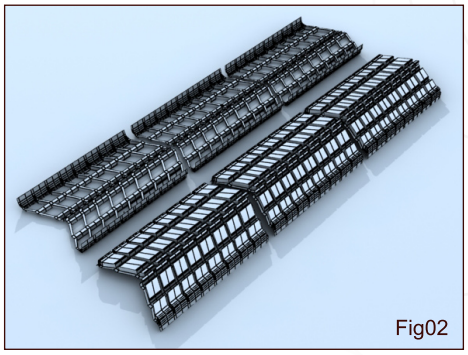
I'm Zdenek Urbánek, I was born in 1987 in the Czech Republic where I live and study. In this Making Of, I will show you something of the process I used to create this scene. For this scene I used 3DS Max 7, and Adobe Photoshop for creating the textures. Firstly, I found many reference images and blue-prints of the Mustang 1965, and used a few elements from other models as reference material. For the blue-prints I made 4 planes for 4 views, and I right-set it with the aid of a box (Fig.01).

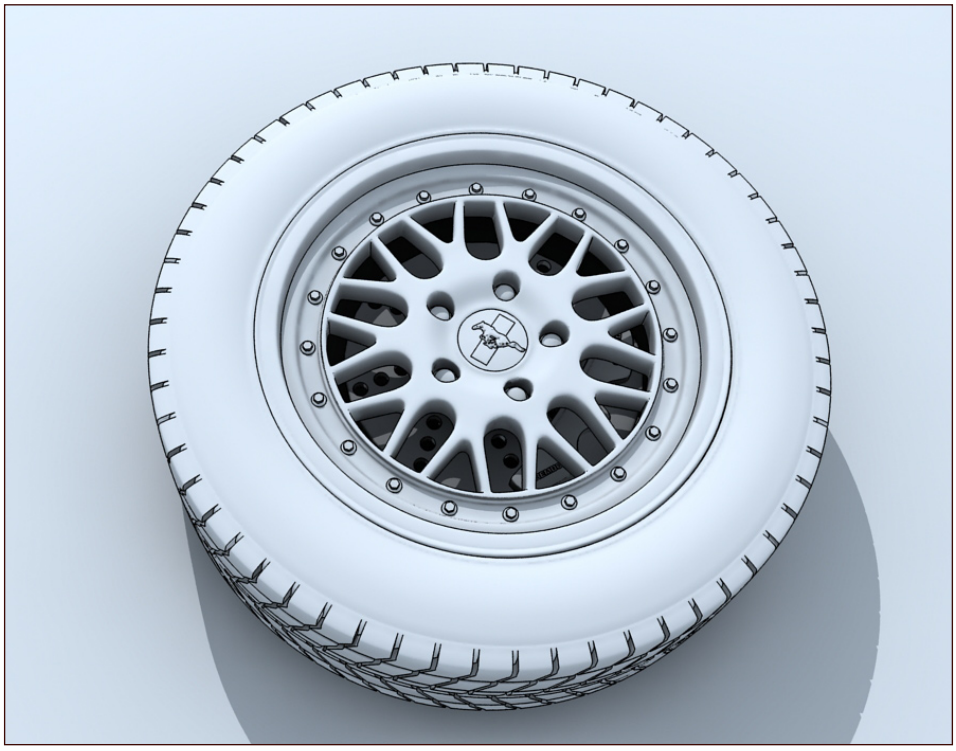

Fig01

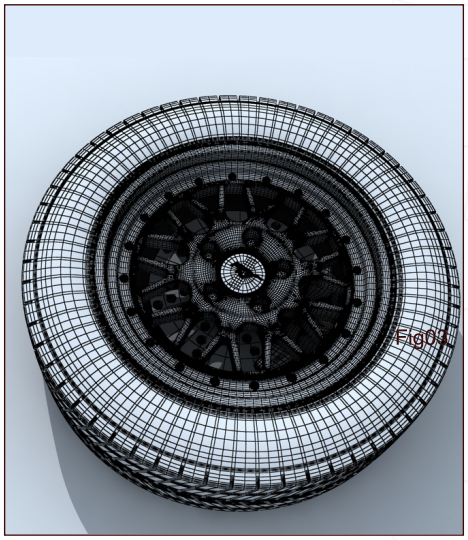
Modelling

I started by creating the wheel. On the tyre, I have done one part which I attach for the right duration (Fig.02). For the wheel rim, I did this in the same way (Box Modelling). I then made the wheelbrace and the Mustang logo which is in the middle wheel. Behind the wheel, I created




Fig02




Fig03

a simple brake. I made a narrow cylinder in the correct proportion, and to the cylinder I added a lot of holes (Fig.03). This rim, for example, isn't typical of a Ford Mustang, but I wanted it. Fig.04 is the show render wheel only. This image

was done in a Final Render System, but the settings for V-ray were very similar. Regarding the material, I will talk about this later. Fig.05 is the final car model in a wire render and all is ready for meshsmooth. The basic form of the vehicle body was made according to prepared blue-prints (which I discussed at the beginning). Afterwards I added more details, which are very important for the final render. I would like show you some details of the interior - steering wheel, seats, handles - but these parts are all almost invisible in the final render (Fig.06). The details will follow next...


Fig04

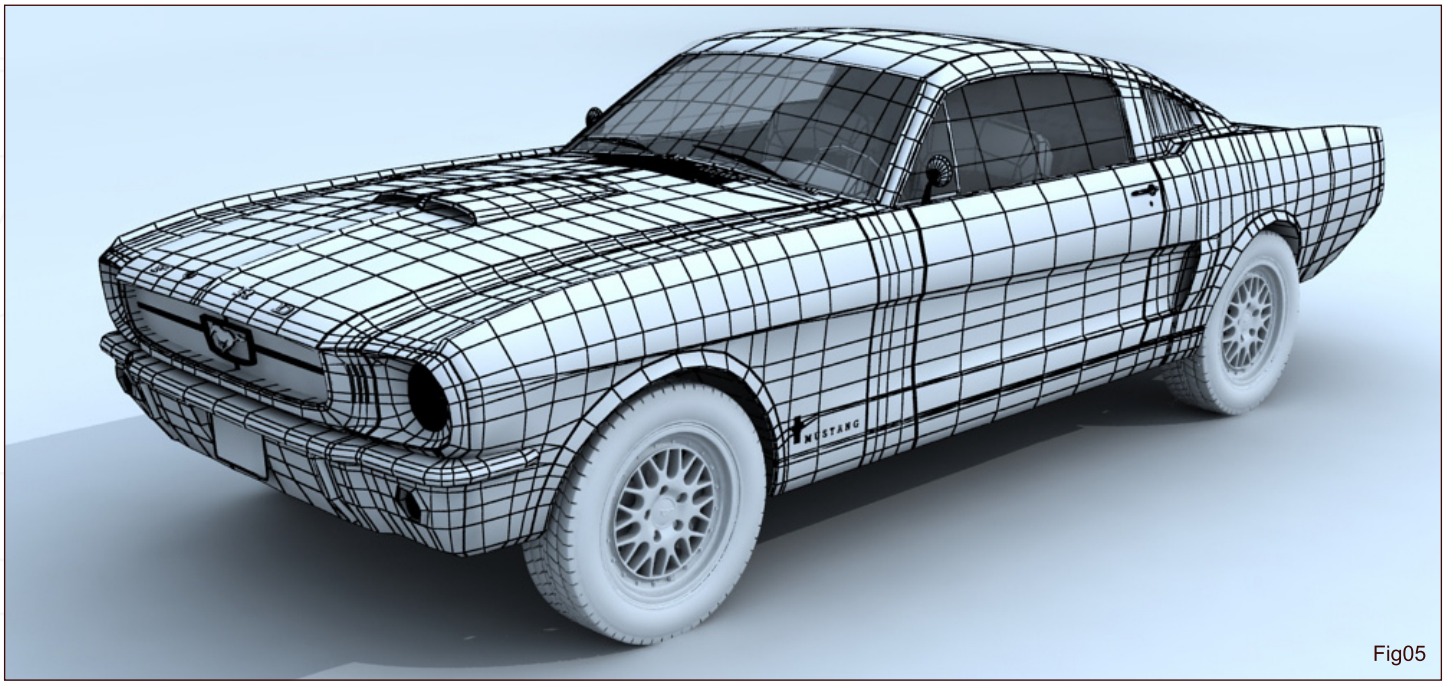
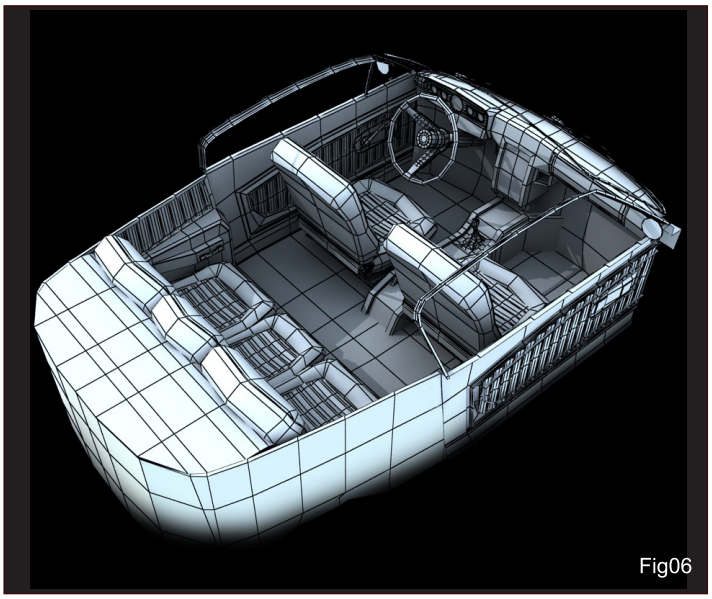
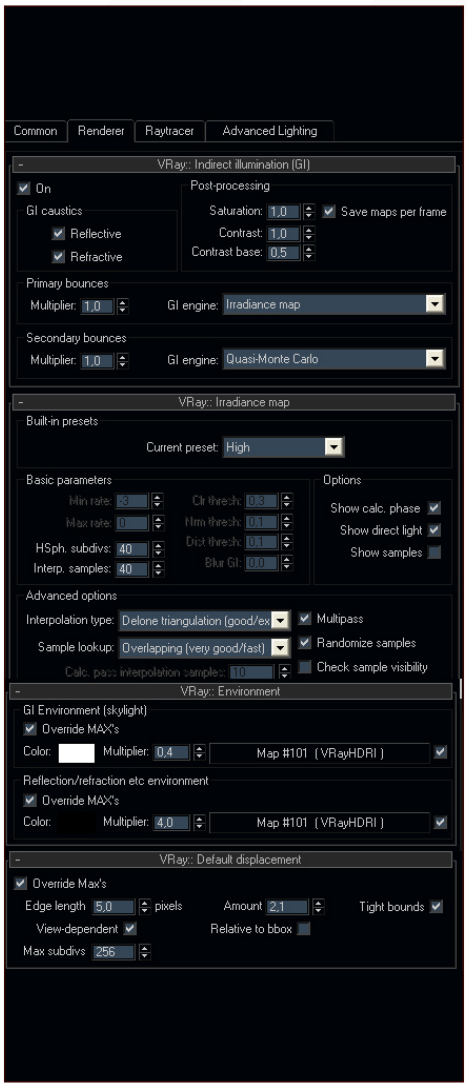


Fig05




Fig06



Texturing and shading

I found most of the textures on the Internet and used Photoshop for corrections. For the tarmac texture I used a few textures from a few packs, made in Photoshop. One texture had 6000x4000, and from that I made a bump map and displacement map. For the car material I used a composite mat. The car shade has three parts: the first part is a basic shade which has two layers, both have VrayMtl where it has a reflect fall-off map; the second part is the dirt, which is just a bitmap as diffuses and an alpha map which controls opacity, all drawn in Photoshop and using a texture from the 3DTotal Textures collection; the third part of the composite mat is the speed stripes which is like the basic material but is white in colour and less reflective. Wheels have VrayMtl where it is a spectral noise map, and a bump map for the text on the side of the wheel.

Rendering and lighting

The whole scene was rendered in V-ray .There is one target directional light and the same HDRI map. The final image was rendered with an “anti-aliasing” filter, set on Catumll-Rom. The render engine is an irradiance map set on the image. Because I don’t have a powerful computer, I had to reduce some of the set up. The scene was rendered on AMD Athlon 1800+, 1024Mb Ram and Ati Radeon 9600. The render time was about 9 hours (Fig.07). Fig.08 shows the environment. The puddles were created as a big plane, after we can see pools where there is tarmac (second plane) reduced by a displacement map. In the final image, I used Photoshop post-production only for the brightness (Fig.09). The final render of the scene can be seen in Fig.10.



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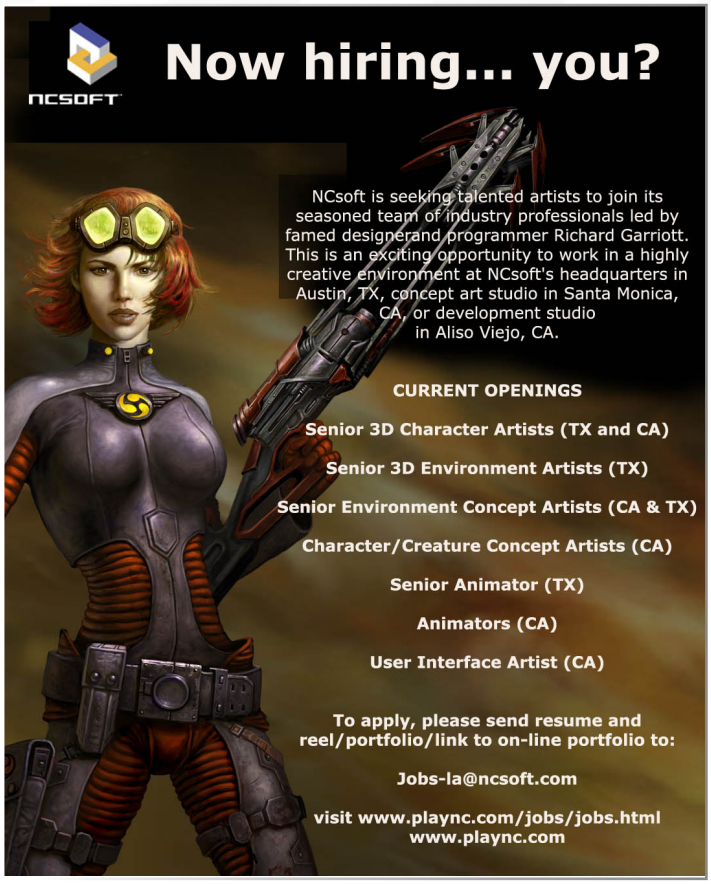
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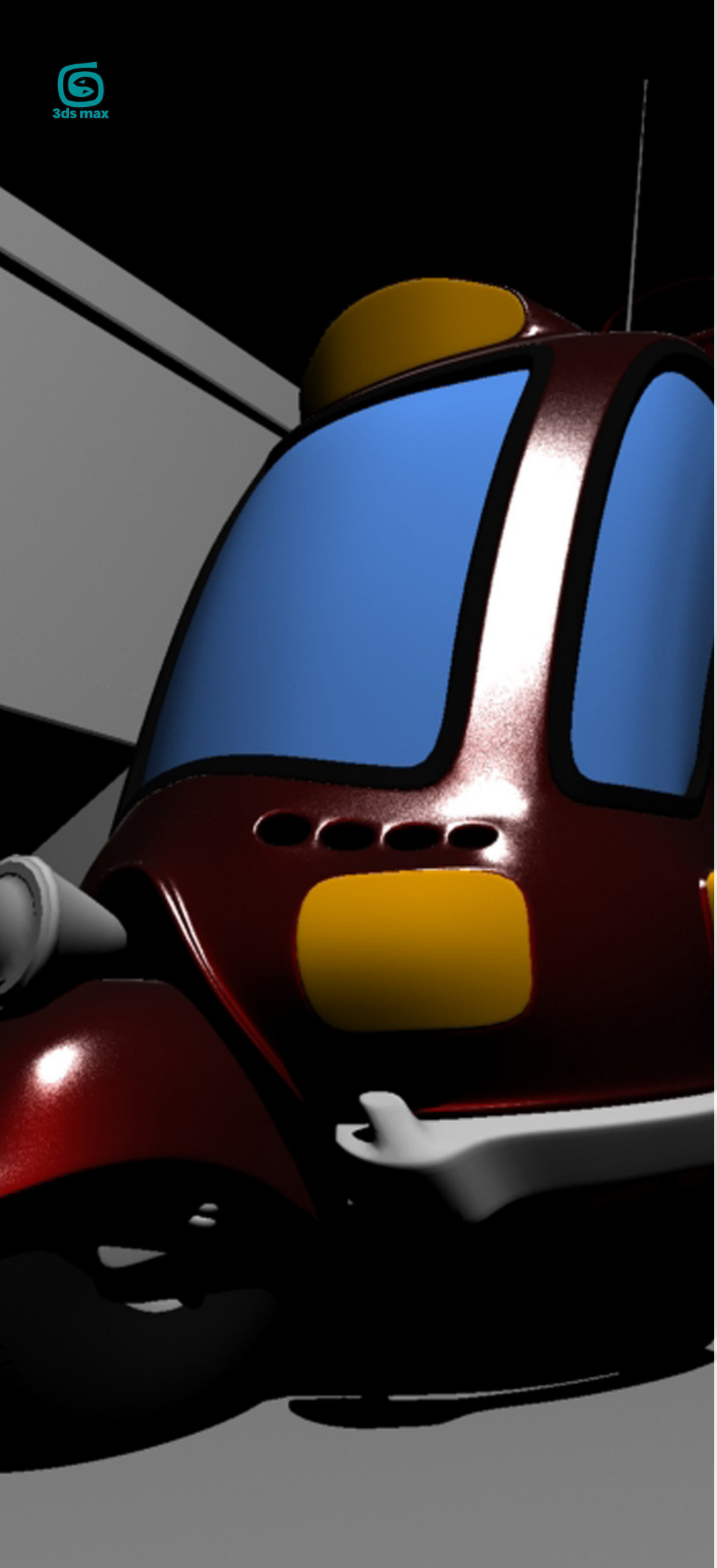
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Tuc-Tuc

3ds max

Is our new precise, step-by-step tutorial which will begin with a vehicle model and cover the principals of applying shaders, placing it in a simple scene and following with a two-part section on both lighting and rendering. The tutorial will begin by creating and applying materials for the various parts of the car, such as glass, chrome and tyres, as well as texturing some simple geometry that will make up a scene. It will then move onto lighting where the focus will be on setting up a lighting rig and the various parameters connected to this. Finally the series will culminate with a section on rendering, where the aim will be to finish with a polished image. The schedule is as follows:

Issue 017 January 2007
Applying Materials & Shaders Part 1

Issue 018 February 2007
Applying Materials & Shaders Part 2

Issue 019 March 2007
Lighting Setup & Rig (with HDRI) Part 1

Issue 020 April 2007
Lighting Setup & Rig (with HDRI) Part 2

Issue 021 May 2007
Rendering Part 1

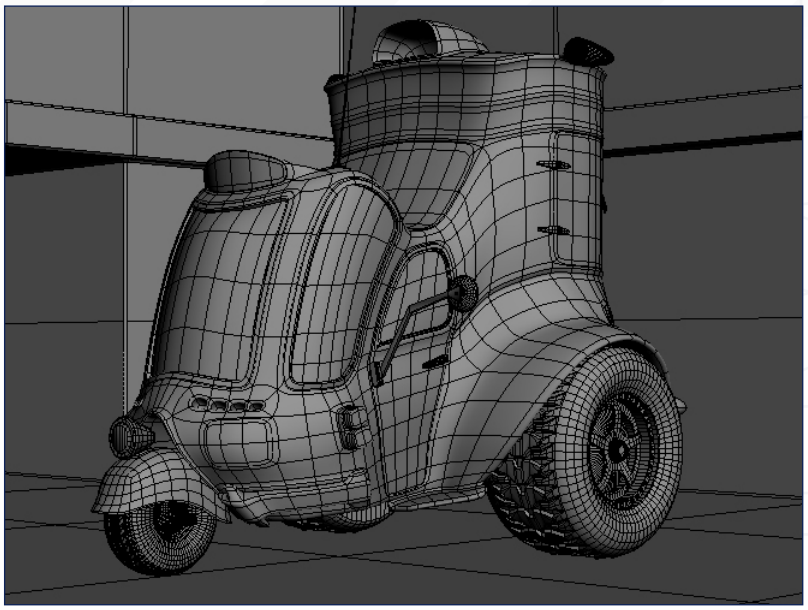
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Rendering Part 2

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Assigning Materials & Shaders - Part 1

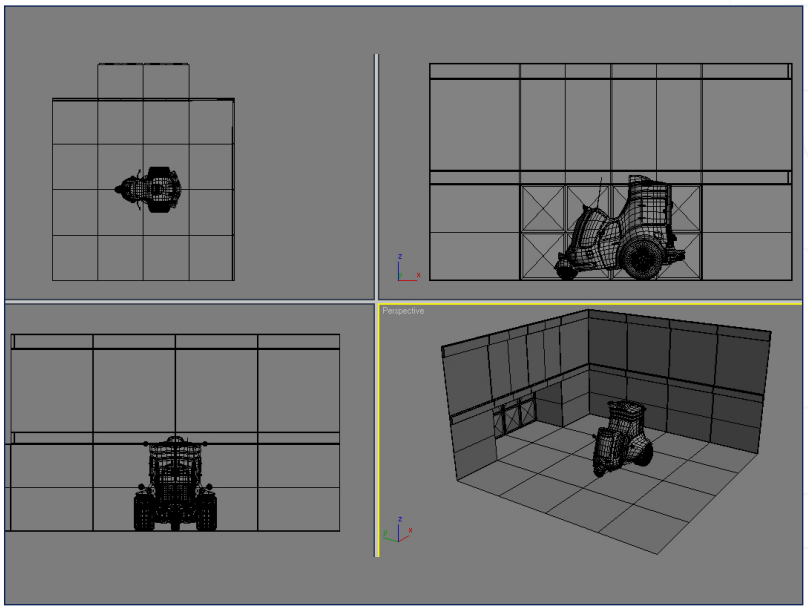
1. Here is our TucTuc vehicle model, put into a simple scene made by geometric objects, modelled with insets and extrusions (Fig.01).

Fig 01



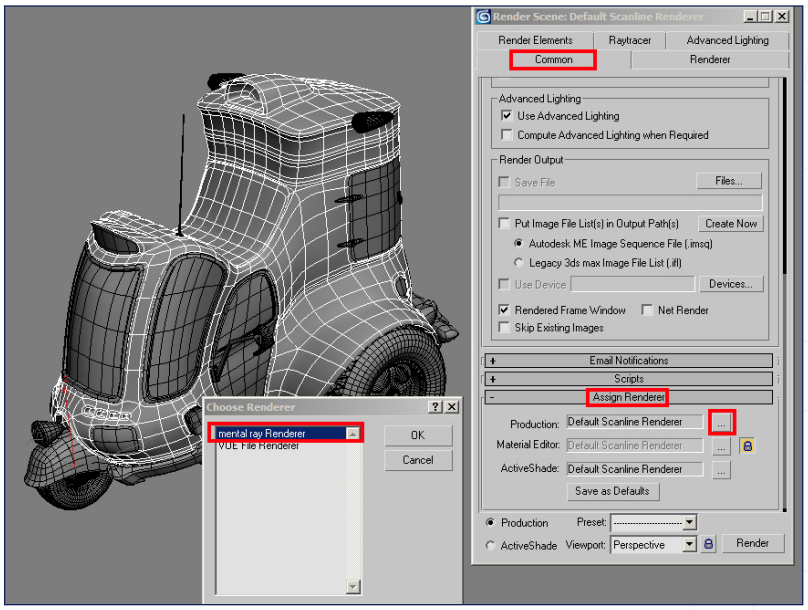
2. Let's have a closer look to how the scene is composed, viewing it from different angles (Fig.02).

Fig 02



3. We will use Mental Ray as renderer, so let's set 3DS Max to use it. Go to the rendering panel (F10 shortcut key), select the Common tab. Go to the Assign Renderer rollout and click on the three-dots button next to Production. Select Mental Ray renderer from the window that appears (Fig.03).

Fig 03



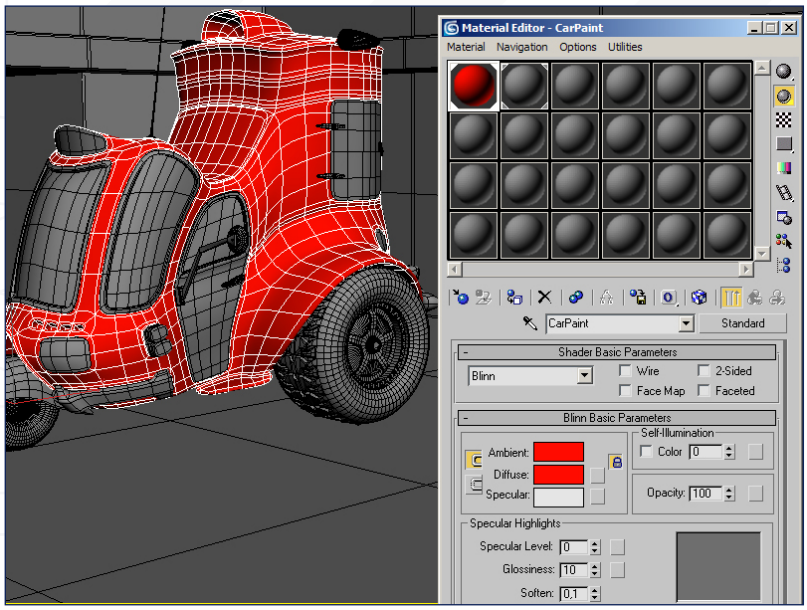


Fig 04

4. Now we can start creating and assigning materials to the vehicle components. First of all, create a “CarPaint” material. Set its colour to red (or whatever colour you like) and assign this material to the main body of the vehicle (Fig.04). Don’t forget to assign meaningful names to the materials you create, for clarity’s sake.

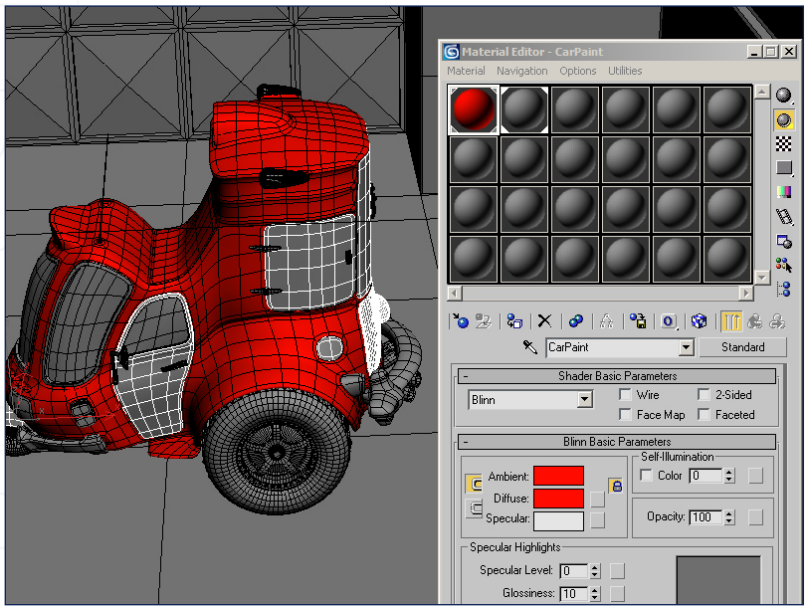


Fig 05

5. Select all the other components that will show the CarPaint material and assign it to them (Fig.05).

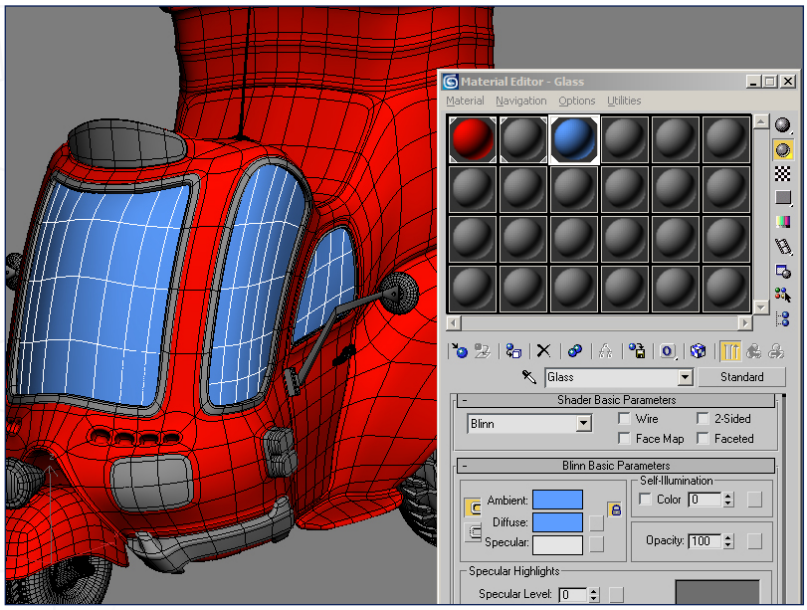
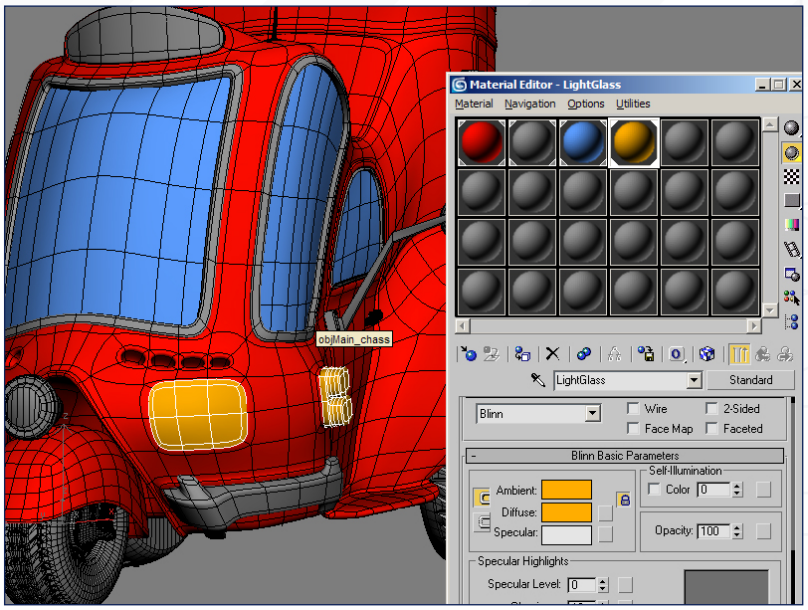


Fig 06

6. Select a new material slot, name it “Glass”, change its colour to something blue-ish and assign it to the glass object (Fig.06).

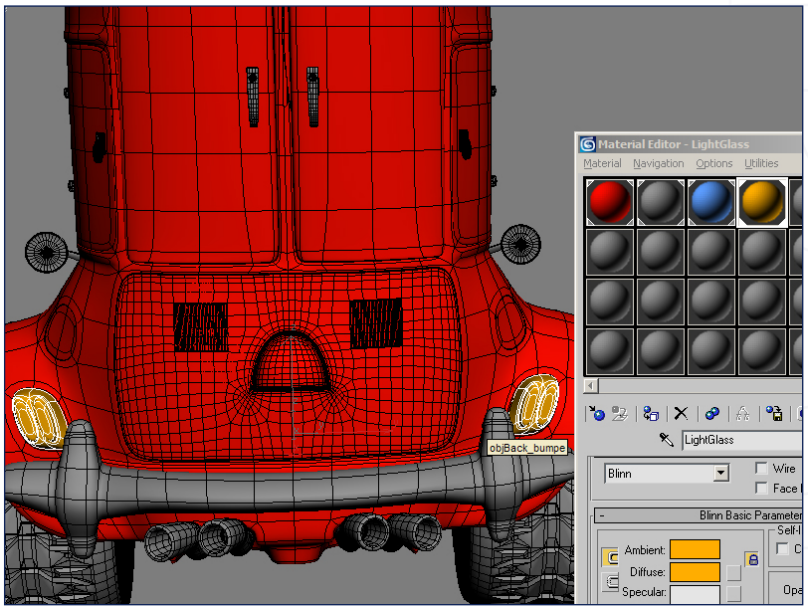
7. Now create a “LightGlass” material with an orange diffuse colour and assign it to the objects marked with the white wireframe in Fig.07.

Fig 07



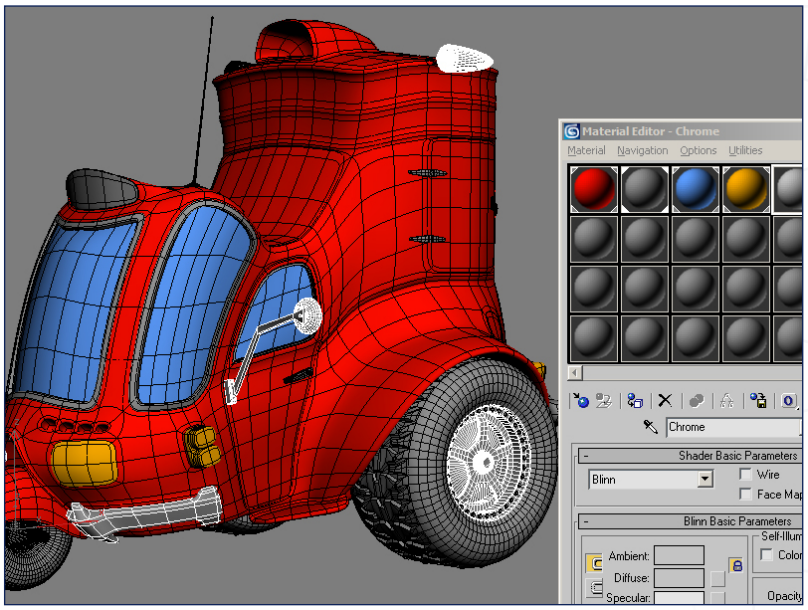
8. Don’t forget to assign the same LightGlass material to the back lights (Fig.08).

Fig 08



9. Select all the chromic parts of the vehicle and assign a light greyish “Chrome” material, like shown in Fig.09.

Fig 09



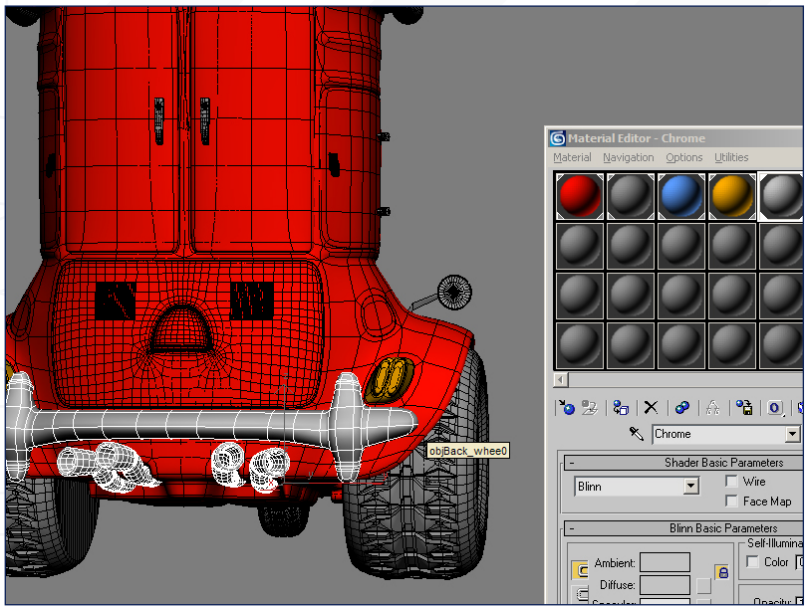


Fig 10

10. Once again, rotate the view around the model and check if there is any other component needing the Chrome material. If there is any, assign this material to it (Fig.10).

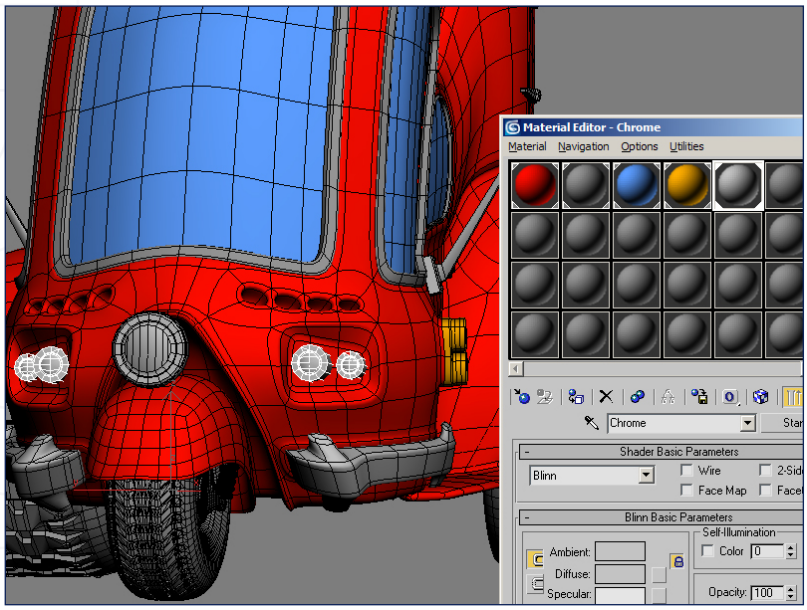


Fig 11

11. Hide the front light glass object and assign the Chrome material to the inner components of the front lights (Fig.11).

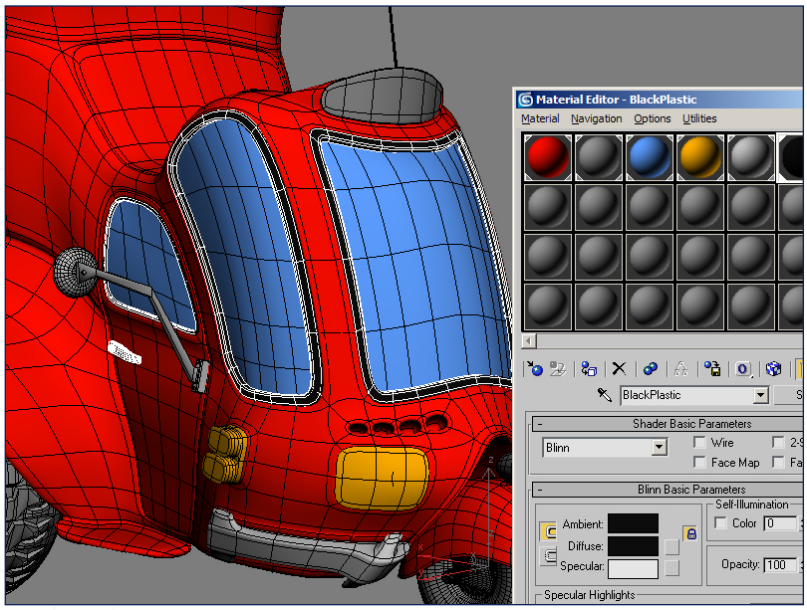
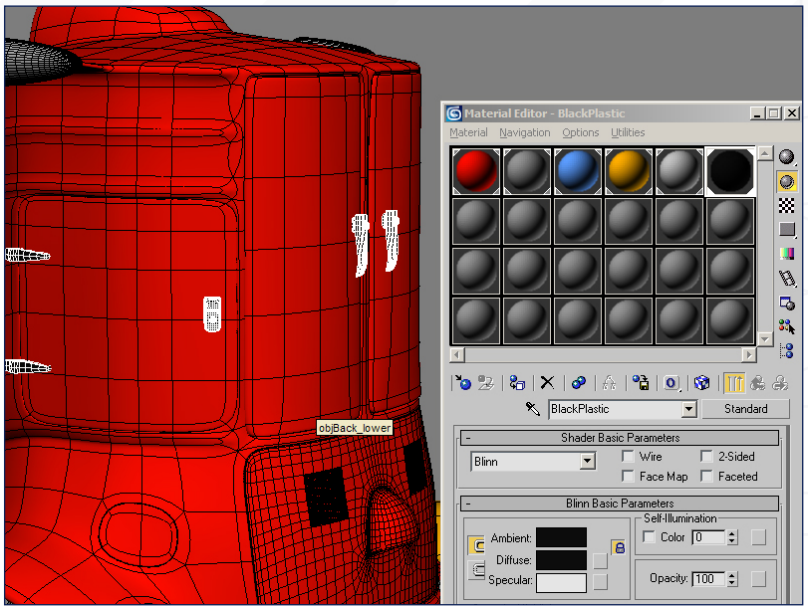


Fig 12

12. Create a new “BlackPlastic” material; give it a dark grey (almost black) colour and assign it to the objects shown in Fig.12.

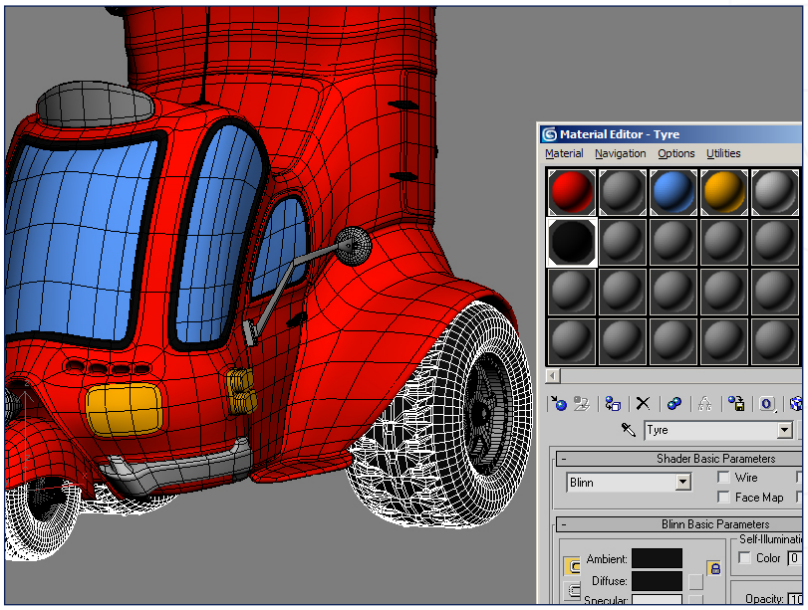
13. Rotate the view and assign the BlackPlastic material to these objects, too (Fig.13).

Fig 13



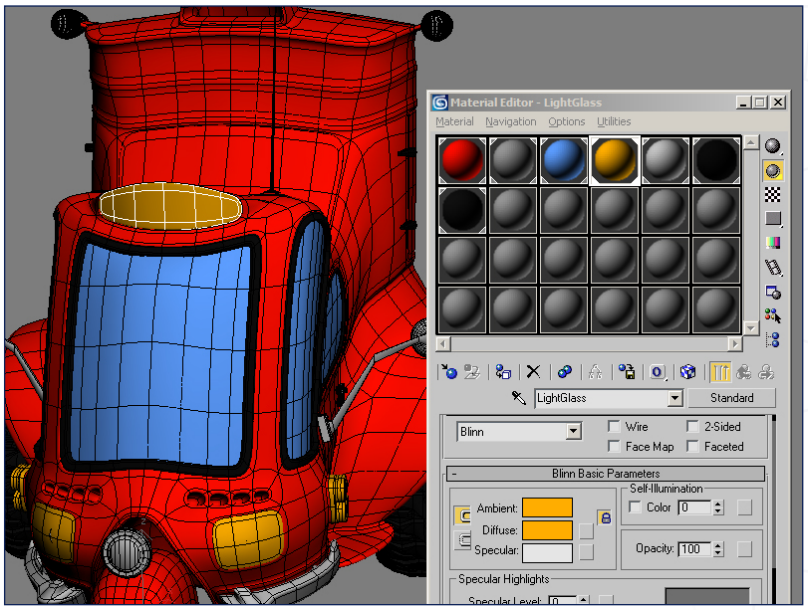
14. Create a dark grey (almost black) “Tyre” material and assign it to the three tyres in the scene (Fig.14).

Fig 14



15. Assign the LightGlass material to the top-front light glass (Fig.15).

Fig 15



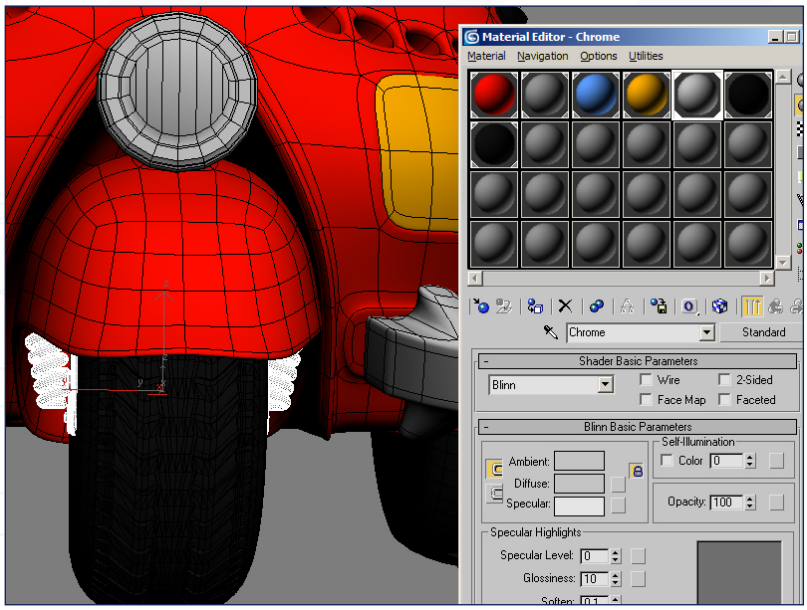


Fig 16

16. Assign the Chrome material to the objects marked with the white wireframe in Fig.16.

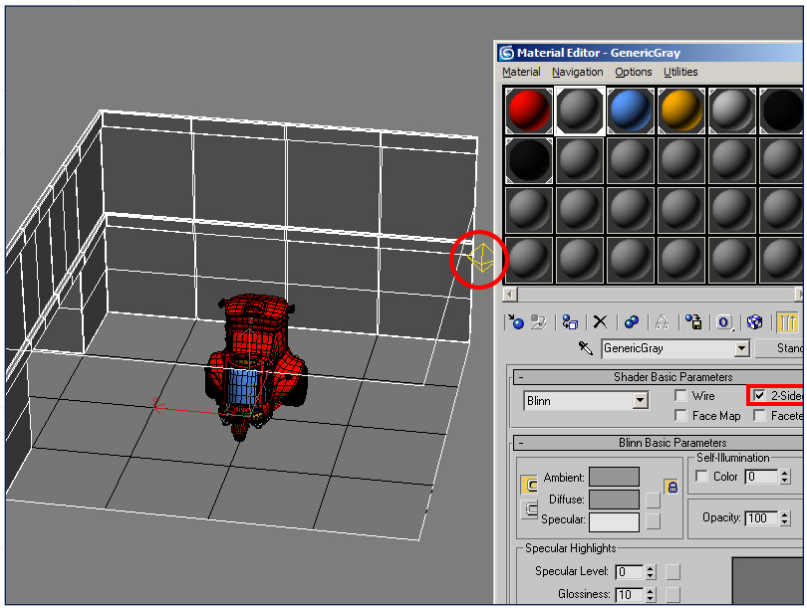


Fig 17

17. Create a “GenericGray” material, check the 2-sided option, and assign it to scene elements (such as walls, ground, etc.). Make sure that no objects of the vehicle are currently selected. Also, create an Omni light and position it like shown in Fig.17 and 18.

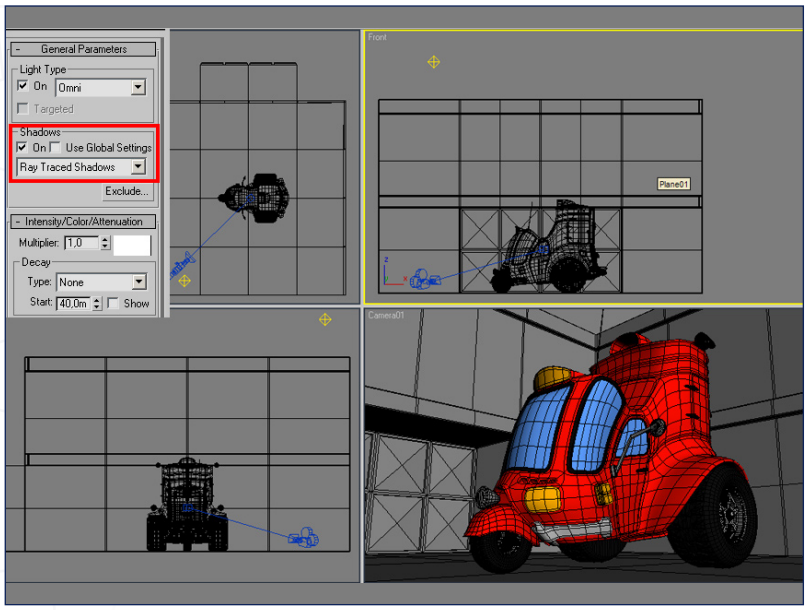
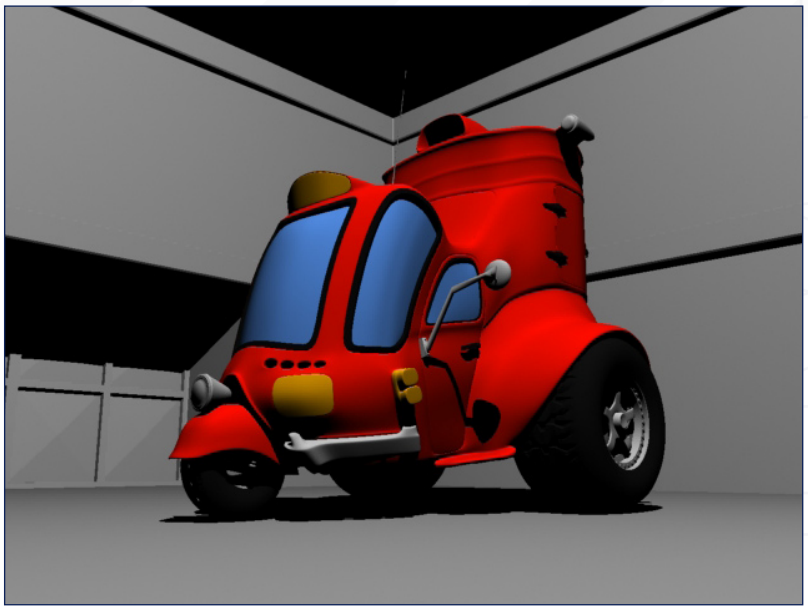


Fig 18

18. Select the Omni light and change its shadows type to RayTraced Shadows. Of course, set them to “On”. Create a Camera and position it like shown in Fig.18. Select the Perspective View and use the “C” shortcut key to see through the camera.

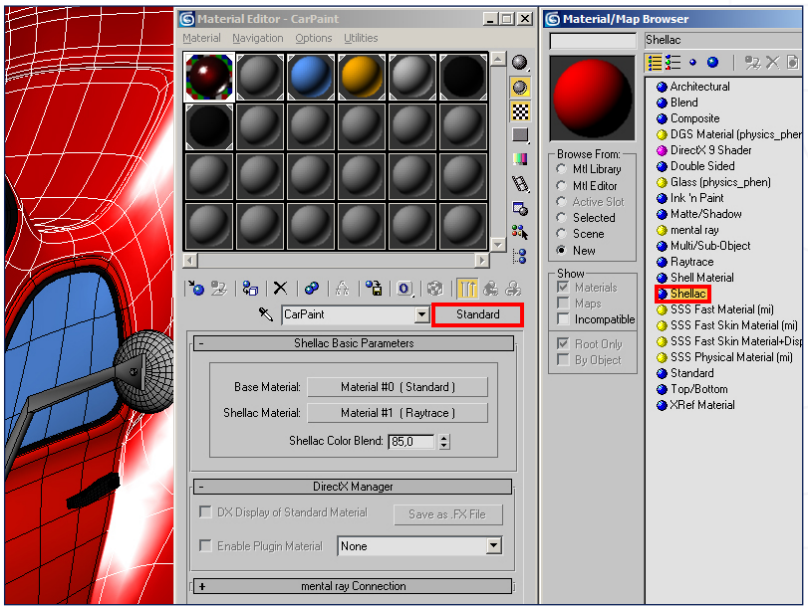
19. Render the scene (F9 for Quick Render) and you should get something like the picture in Fig.19. Now we can start working on every material and detail it. Let's start with the CarPaint, which is the most important shader in the scene.

Fig 19



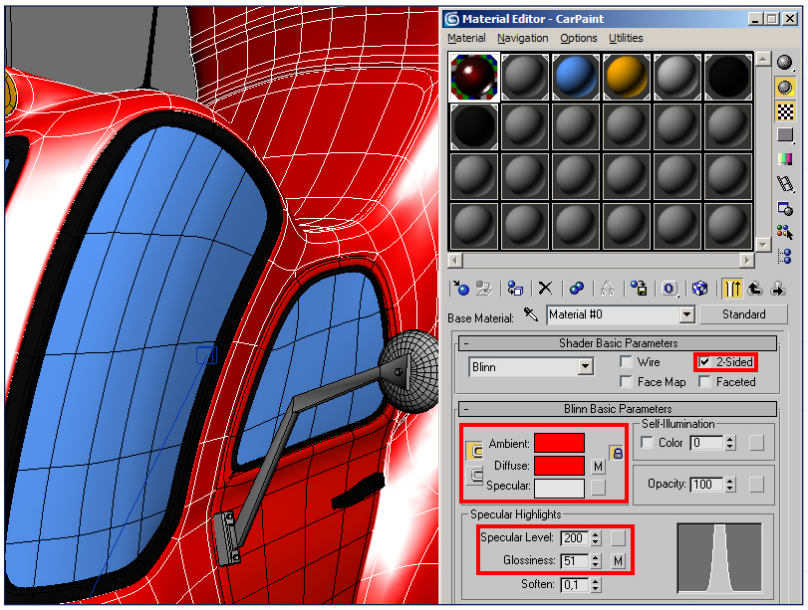
20. Select the CarPaint slot in the Material Editor and click on the Standard button. Select the Shellac shader from the list that appears. This will change the shader type and its properties. The Shellac material is composed by two different layers; one Base layer, and one Shellac layer. This is the right choice for our CarPaint shader.

Fig 20



21. Click on the Base layer to select it. Check the 2-sided option; change the Diffuse colour to red (or any colour you like). Set the Specular Level to 200 and Glossiness to 51.

Fig 21



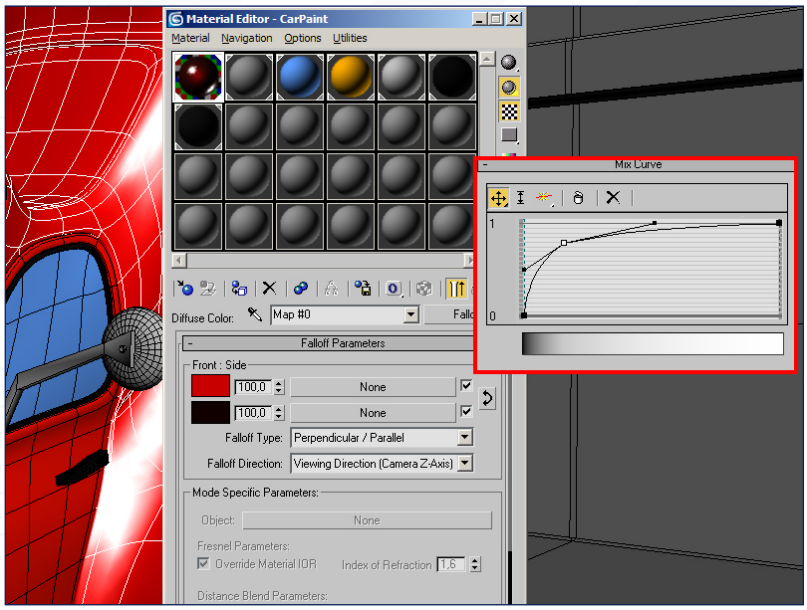


Fig 22

22. Click on the Diffuse slot and assign a Falloff map to it. Change the Falloff colours to reddish (top colour) and black (bottom colour). Also, change the Falloff mixing curve like shown in Fig.22. Make sure that Falloff Type is set to Perpendicular/Parallel.

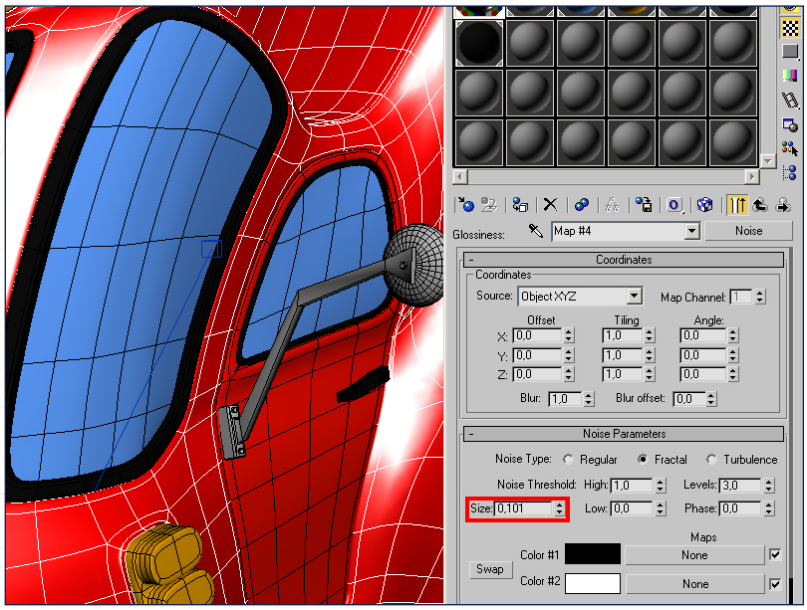


Fig 23

23. Go back to the root of Base layer; click on the slot next to Glossiness and assign a Noise map to it. Change the Noise size to something right for your scene (it depends on your scene size, so use the values in Fig.23 just as a reference, since they may not suit your scene size). Change the Noise type to Fractal.

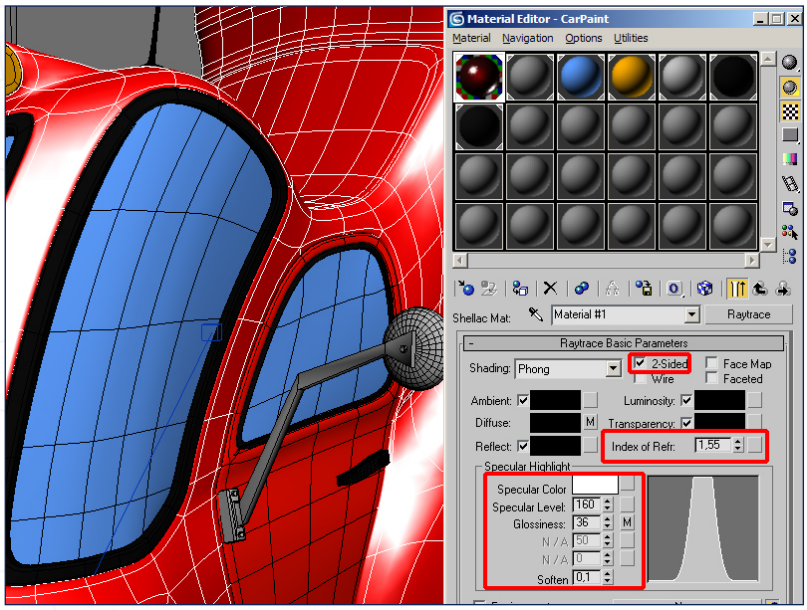
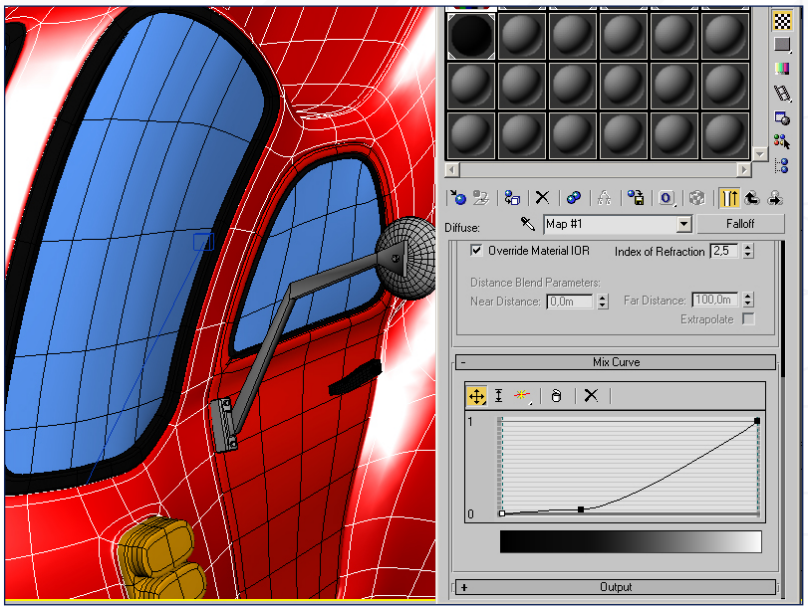


Fig 24

24. Go back to the root of Shellac material; click on the Shellac layer, click on the Standard button and select Raytrace. Check the 2-sided option. Set the Index of Refraction to 1,55. Set the Specular Level to 160 and the Glossiness value to 36.- Leave the other parameters as they are (Fig.24).

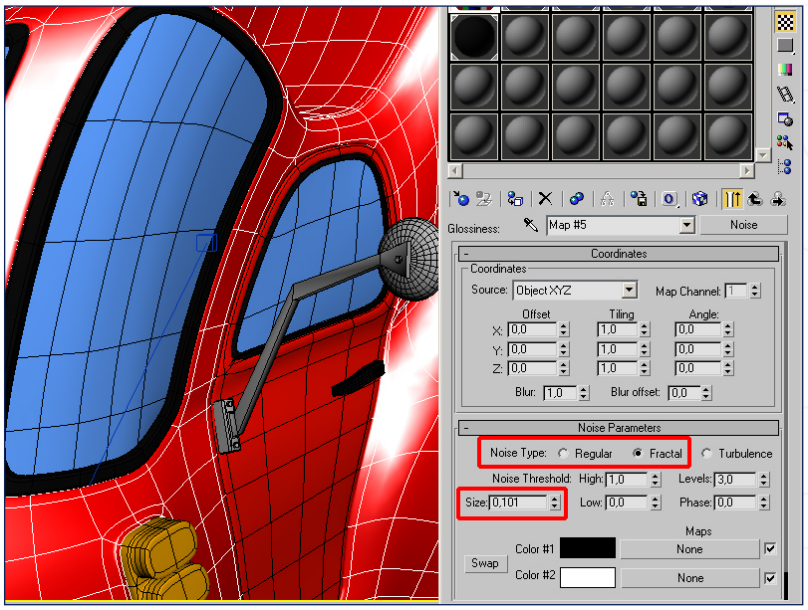
25. Click on the Diffuse slot and assign a Falloff map to it. Leave the default colours (black and white) and change the Mix curve to something similar to Fig.25.

Fig 25



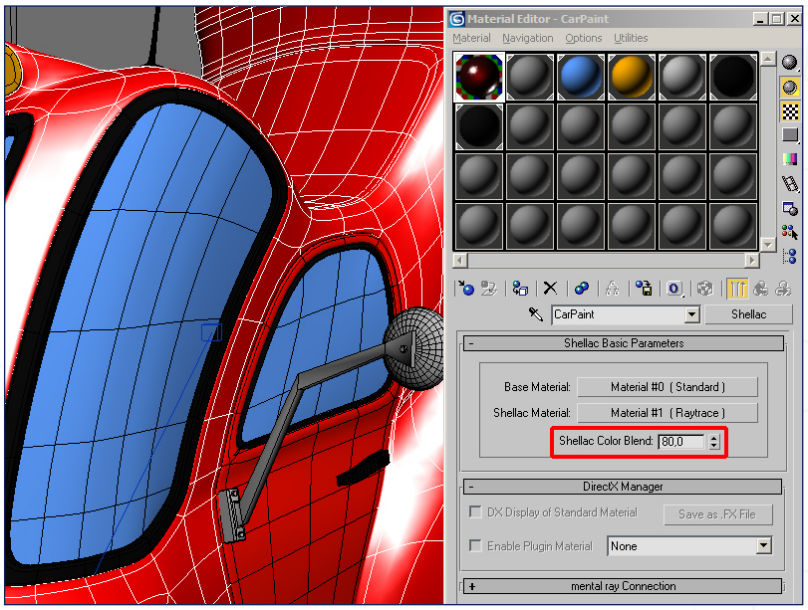
26. Go back to the root of Raytrace material and assign a Noise map to the Glossiness slot. Once again, set its type to Fractal and lower the size value. You have to try and find the right noise size for your scene. Use Fig.26 just as a reference for the Noise values.

Fig 26

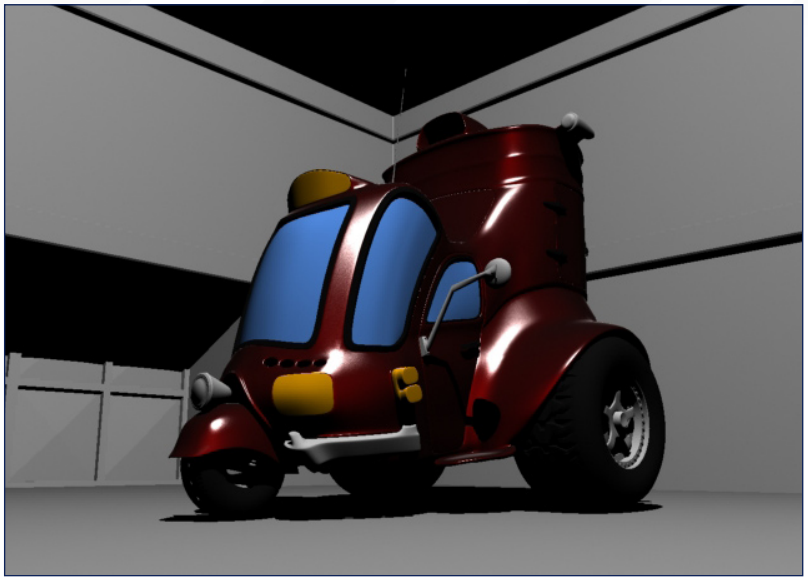


27. Go back to the Shellac material root and set the Shellac Colour Blend to a value of 80 (Fig.27).

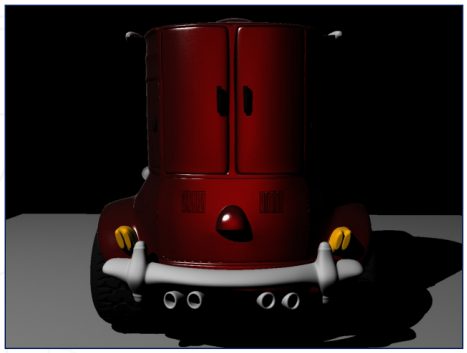
Fig 27

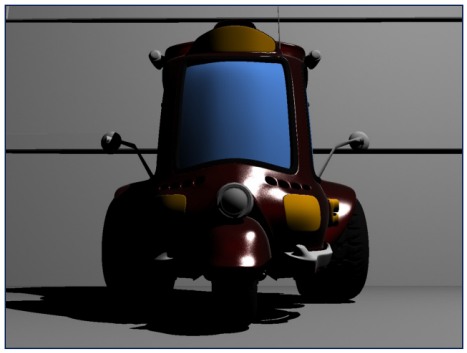


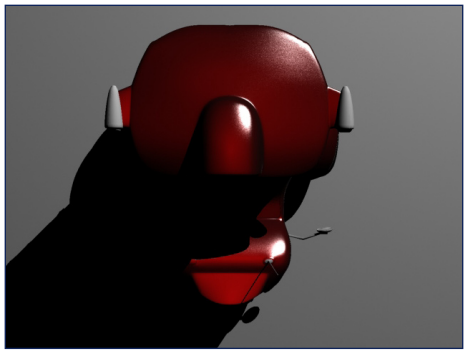
28. Make another Render and you should have something similar to Fig.28. Don't worry if the picture is still too dark, we will deal with lighting in the next parts of this tutorial. Here are some renders of the scene from different viewpoints:

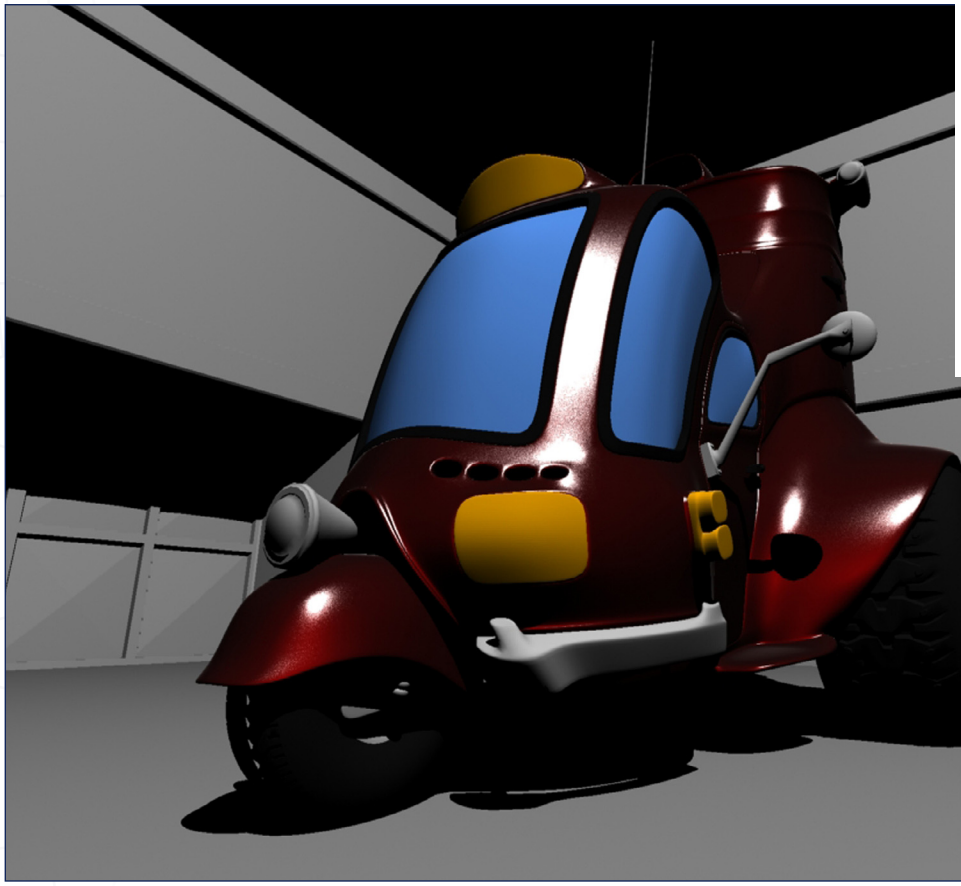


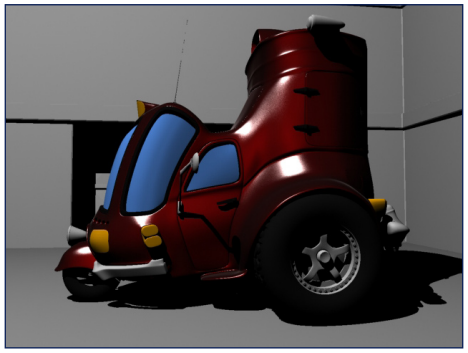
TUC TUC Designed & Modelled by:
RICHARD TILBURY
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Tuc-Tuc

CINEMA 4D

Is our new precise, step-by-step tutorial which will begin with a vehicle model and cover the principals of applying shaders, placing it in a simple scene and following with a two-part section on both lighting and rendering. The tutorial will begin by creating and applying materials for the various parts of the car, such as glass, chrome and tyres, as well as texturing some simple geometry that will make up a scene. It will then move onto lighting where the focus will be on setting up a lighting rig and the various parameters connected to this. Finally the series will culminate with a section on rendering, where the aim will be to finish with a polished image. The schedule is as follows:

Issue 017 January 2007
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Issue 021 May 2007
Rendering Part 1

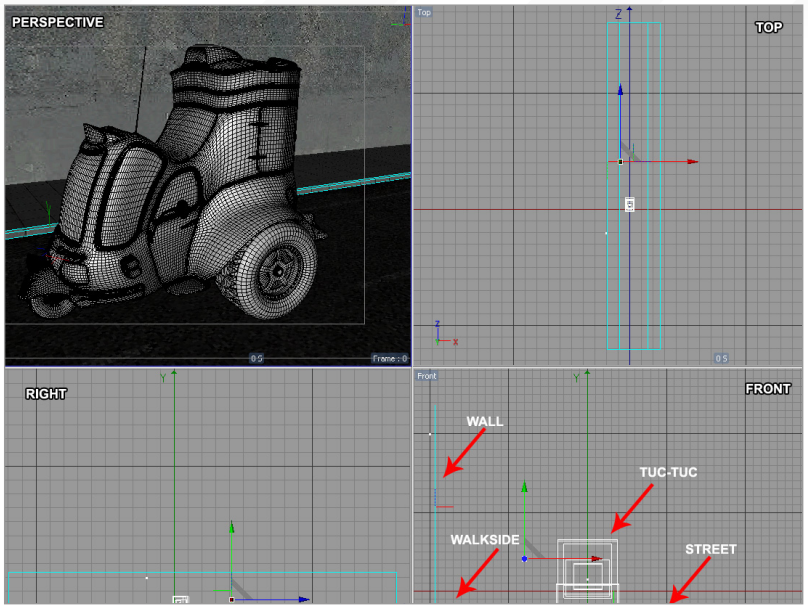
Issue 022 June 2007
Rendering Part 2

Enjoy ...

Applying Materials & Shaders - Part 1

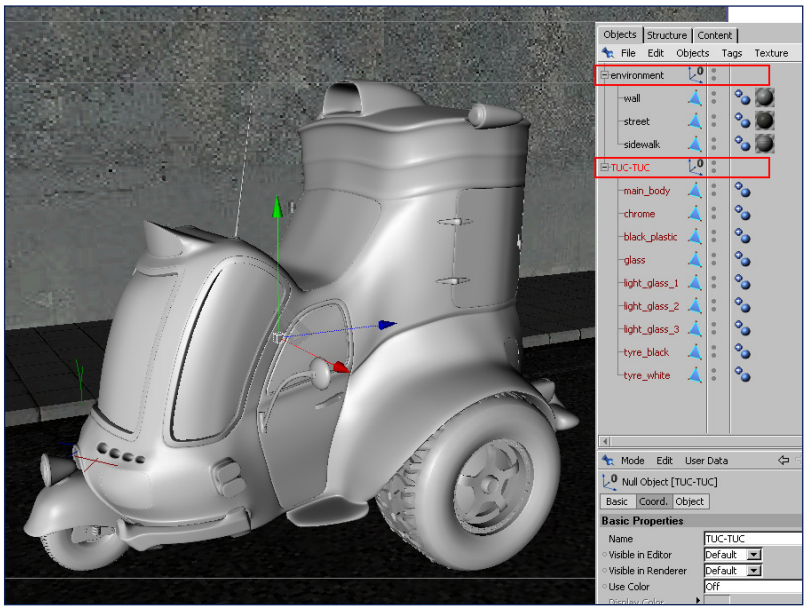
1. In this first part of tutorial we will start seeing how to create and assign the procedural materials to our model. First of all we need to create a simple environment in which to put the vehicle. As you can see from Fig.01 I have created a wall, sidewalk and street.

Fig 01



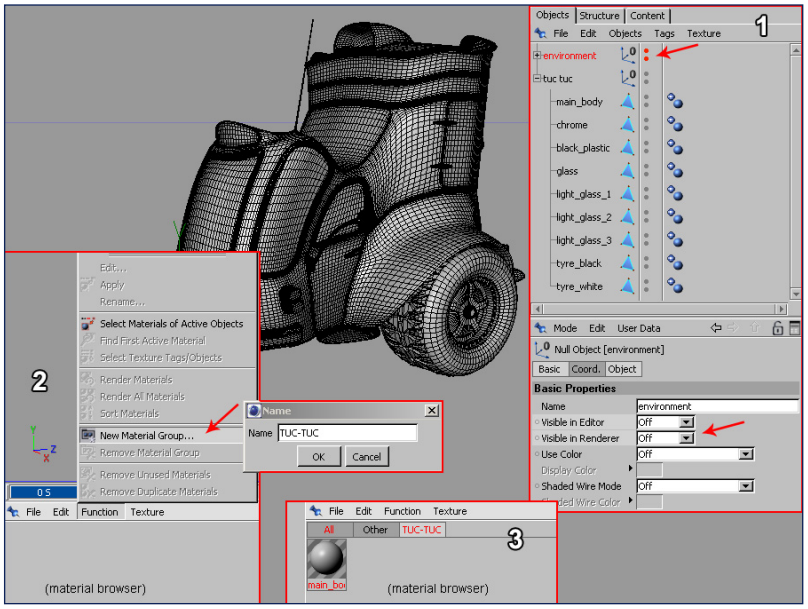
2. The next step is to divide the object according to the materials that we are going to create. In Fig.02 you will notice that I have grouped in a “Null Object” - the objects which make up the environment - and have called it “environment”. While in the second Null Object, called TUC-TUC, you can see all parts that make up the vehicle.

Fig 02



3. Now we are ready to create the materials. First of all hide the environment, as shown in stage 1 of Fig.03. Then in the Material Browser go into the Function menu and create a “New Material Group”, as seen in stage 2 of figure. In this way we will have a library which will contain only the materials of the vehicle. Name this material group “TUC-TUC”. Select it and from the File menu choose “Create New Material” (Ctrl+N). We will start by creating the base of the main body material, so name the new material “main_body”, as shown in stage 3 of figure.

Fig 03



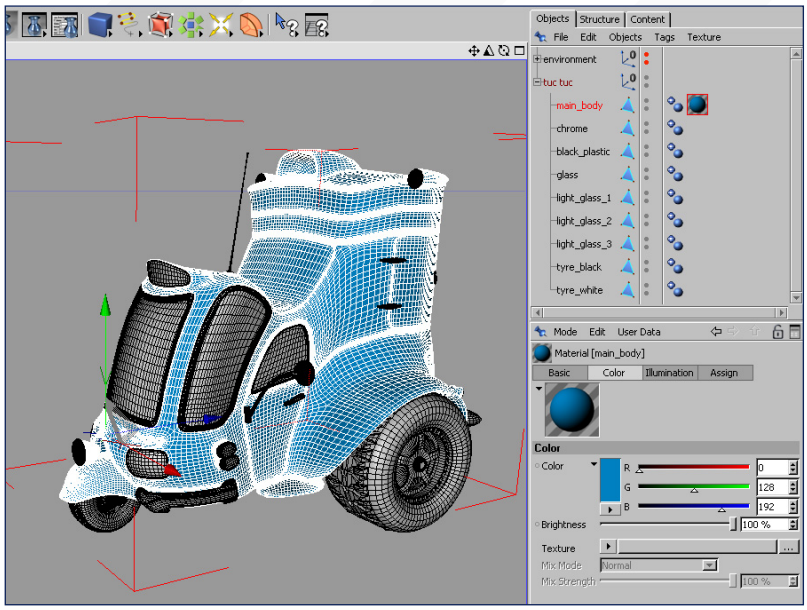


Fig 04

4. Now assign the material to the main_body, : select the object and, into Material Browser, go into Function > Apply, or just drag it onto the main_body object. Change its grey colour to any colour you like, as seen in Fig.04. You may remove the Specular Channel (double-click on the main_body material > uncheck the box of specular channel) or you may leave it. This is not too important at the moment because we are creating the bases of the materials. Later we will modify them, making them more complex and more realistic.

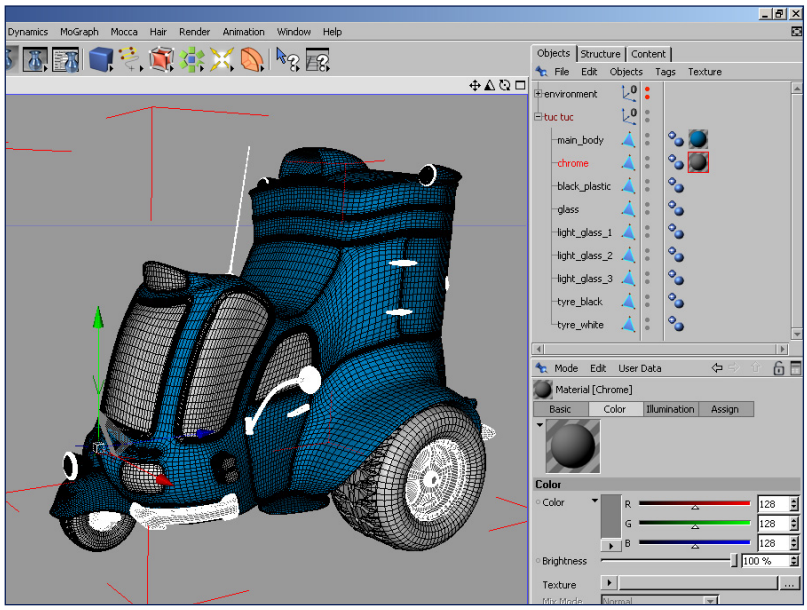


Fig 05

5. Now create a new material, rename it “chrome” and assign it to the chrome object, as seen in Fig.05. You may change its colour or you may leave the default grey colour.

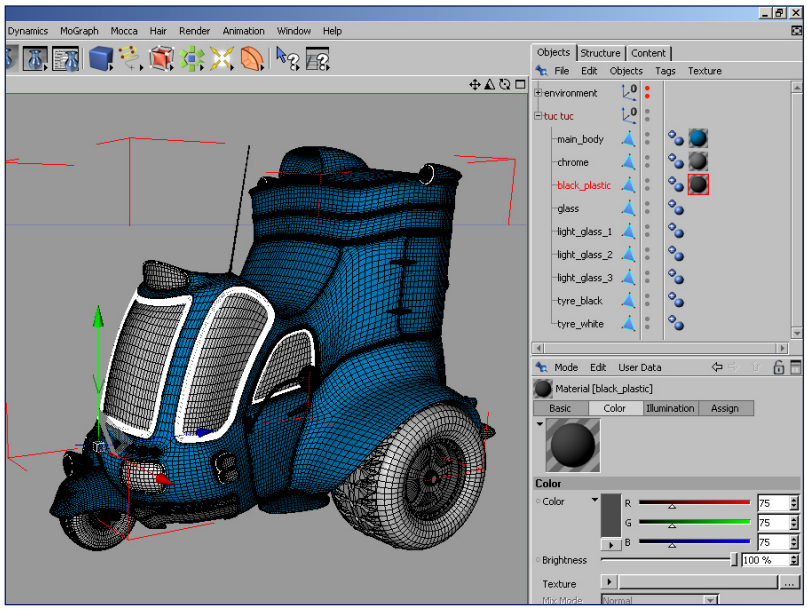
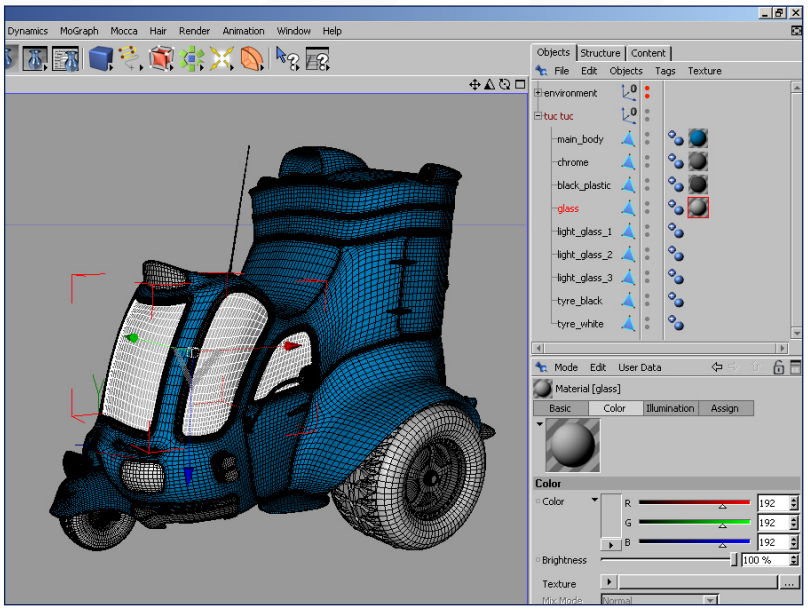


Fig 06

6. Add a new material, call it “black_plastic” and apply it to the corresponding object like shown in Fig06. Change its colour to darker gray as seen in figure.

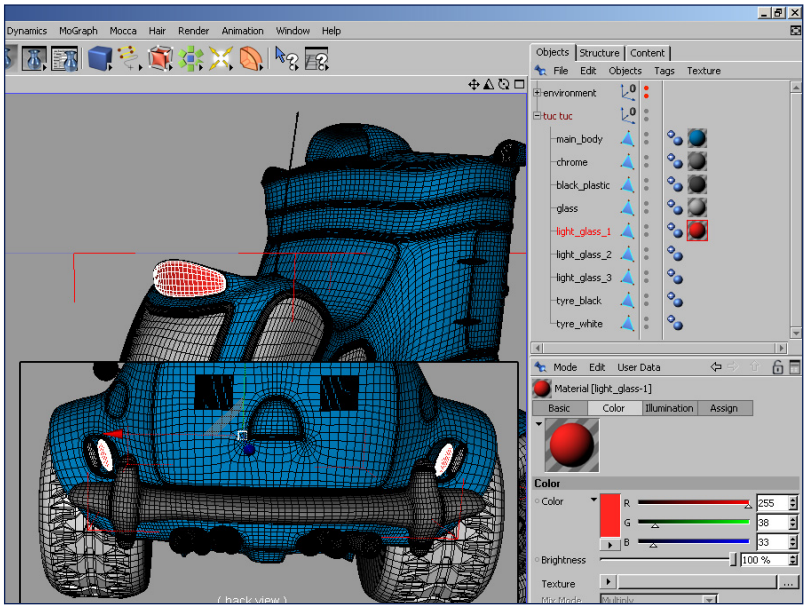
7. Same operation for the glass: create a new material; rename it “glass”; assign it to the glass object; change the colour of the material to a lighter grey, as shown in Fig.07.

Fig 07



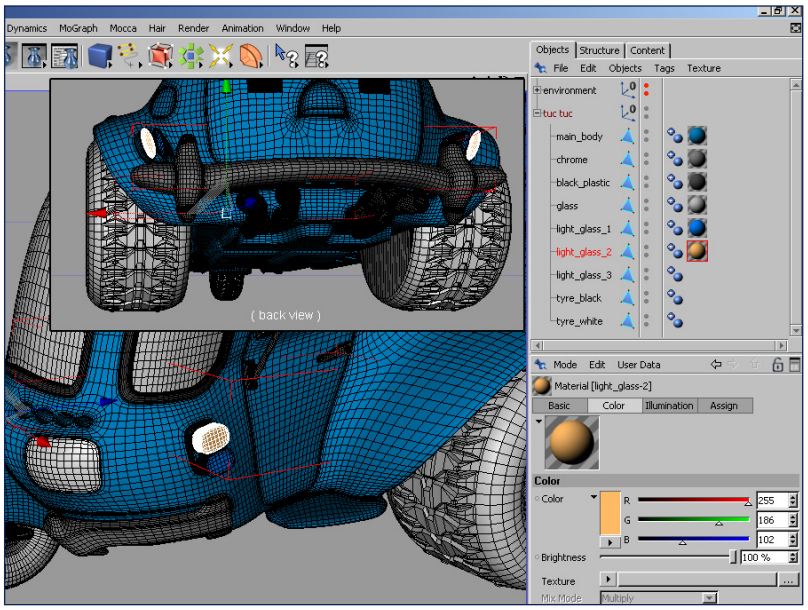
8. Add another material and call it “light_glass_1” and apply it to the corresponding object, as shown in Fig.08. For this material I changed its colour to red.

Fig 08



9. Now create an orange material and rename it “light_glass_2”. Assign it to the object, as seen in Fig.09.

Fig 09



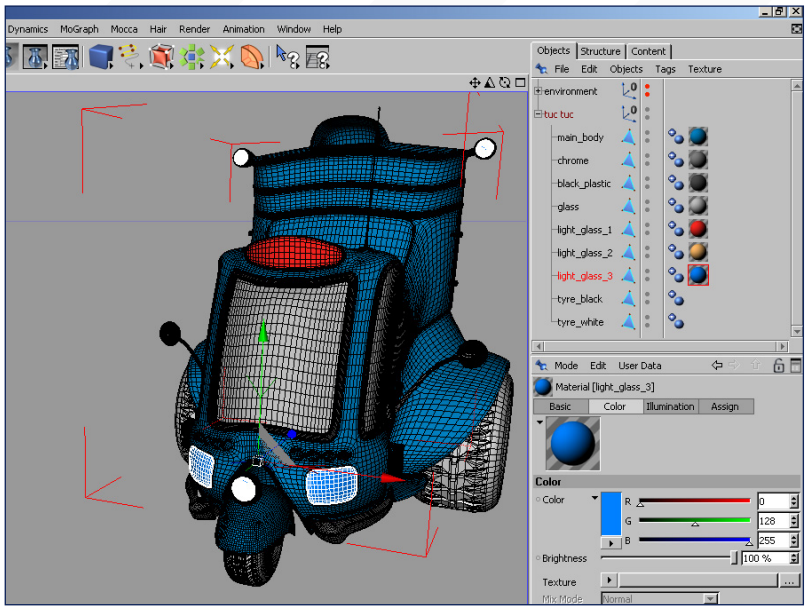


Fig 10

10. This is the same operation for the light_ glass_3 object, so create a blue material, as shown in Fig.10.

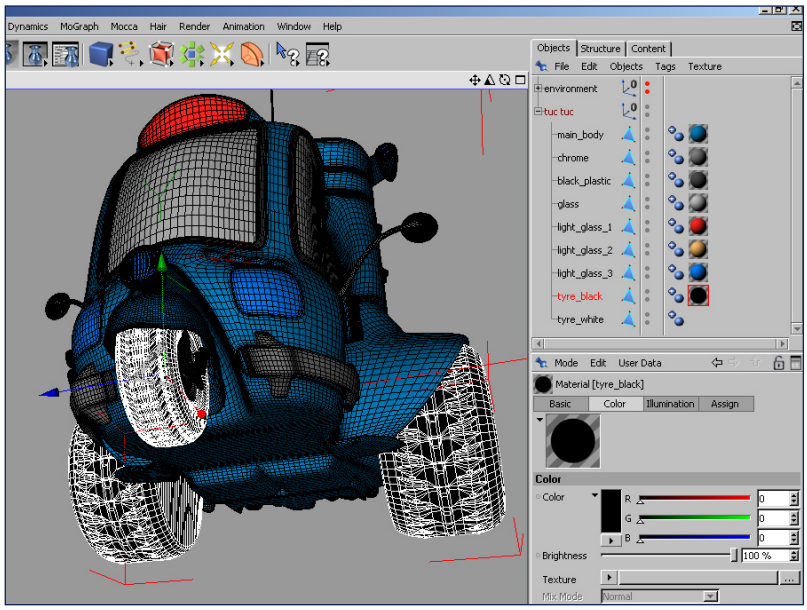


Fig 11

11. Add a new black material and assign it to the tyre_black object (Fig.11).

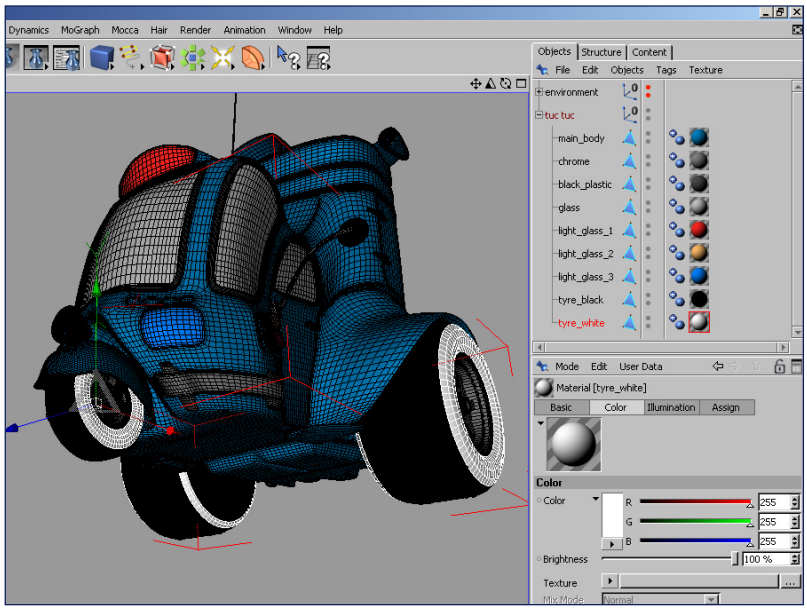
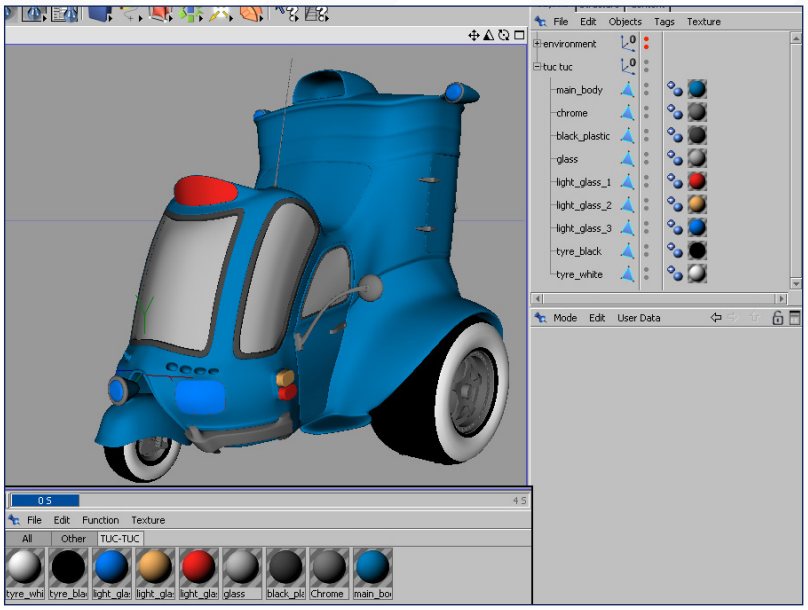


Fig 12

12. Add a new white material for the white part of the tyre (Fig.12).

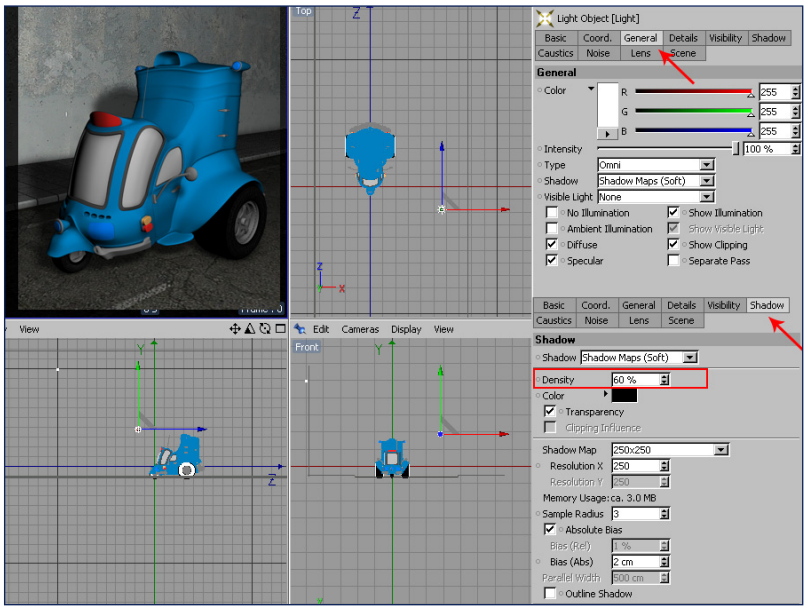
13. Now you can see from Fig.13 that we now have all the basic materials grouped in a material library. It's composed of 9 different materials; main_body, chrome, black_plastic, glass, light_glass_1, light_glass_2, light_glass_3, tyre_black and tyre_white.

Fig 13



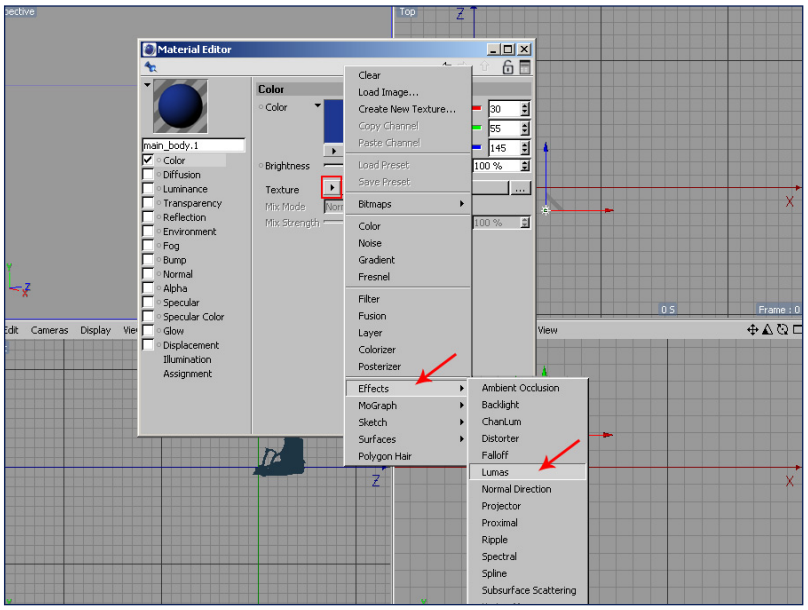
14. Now insert a light into the scene just to see how it's going. This will not be the final lighting but we just need a light to check how the materials work. From the main menu go into Objects > Scene > Omni Light and position the light as shown in Fig.14. In the right of figure, you can see the parameters of the light: Type = Omni; Colour = White; Intensity = 100%; Shadow = Enable; Shadow = Shadow Maps; Shadow Density = 60%. "Un-hide" the environment and then make a render in the Perspective view - the scene looks a bit dark but it's not too bad!

Fig 14



15. It's now time to start working on the most important shader of the scene: the car paint shader. First of all, hide the other parts of the car, so only leave visible the main_body object. Now you already know, Cinema 4D has its own library of advanced procedural materials; Banji, Banzi, Cheen, etc. We will start from one of these advanced materials and next we will modify it in order to obtain our car paint shader. For the main_body material, we will use a Procedural Shader called "Lumas". Its characteristic is to have 3 specular highlights and this allows us to give the shader a high quality. Then load the Lumas shader in the Colour Channel by clicking on the little button near "Texture". From the menu which will appear, choose Effect > Lumas, as seen in Fig.15.

Fig 15



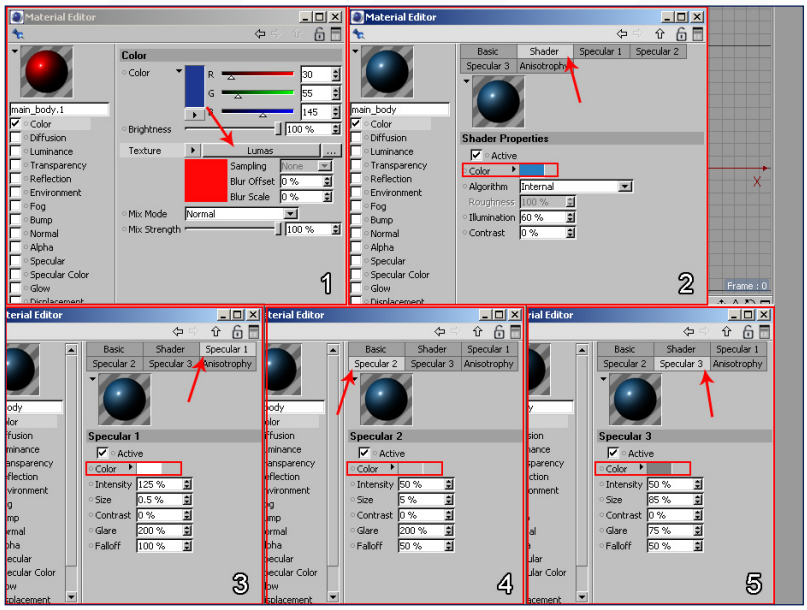


Fig 16

16. Once the material is loaded, click on the tab, as shown in stage 1 of Fig.16. Change the standard red colour to any colour you like, as seen in stage 2 of the figure. In stage 3 you can see the parameters of the “Specular 1”, here just change the colour to white. Change the colour of the “Specular 2”, as shown in stage 4, this time choose a light grey. The same goes for the “Specular 3”, change the colour to a darker grey, as seen in stage 5 of the figure. Leave the other parameters as default, change just the colours of the shader and of the 3 specular highlights.

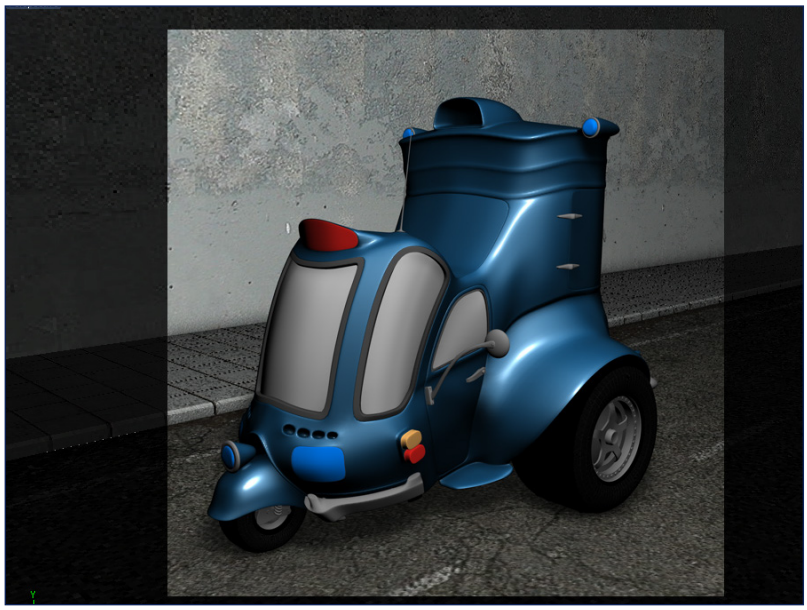


Fig 17

17. Make a render to see how it’s going (Fig.17).

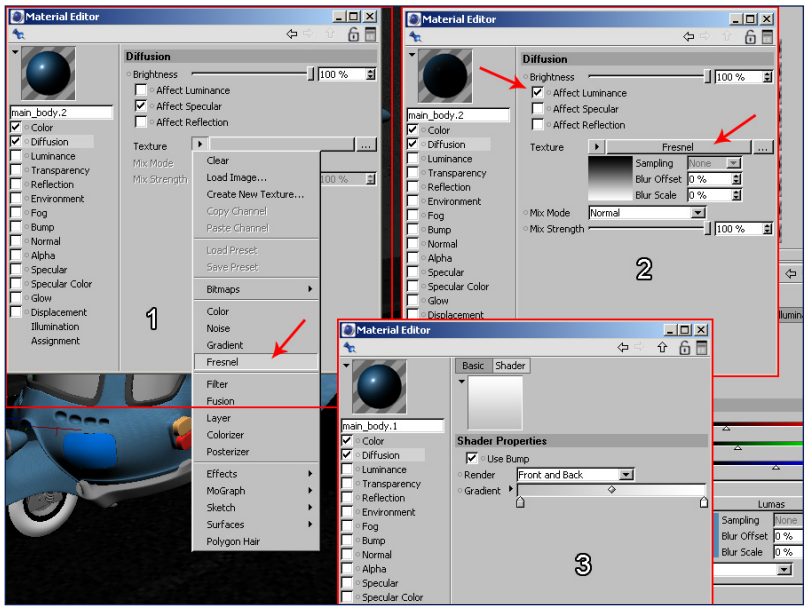
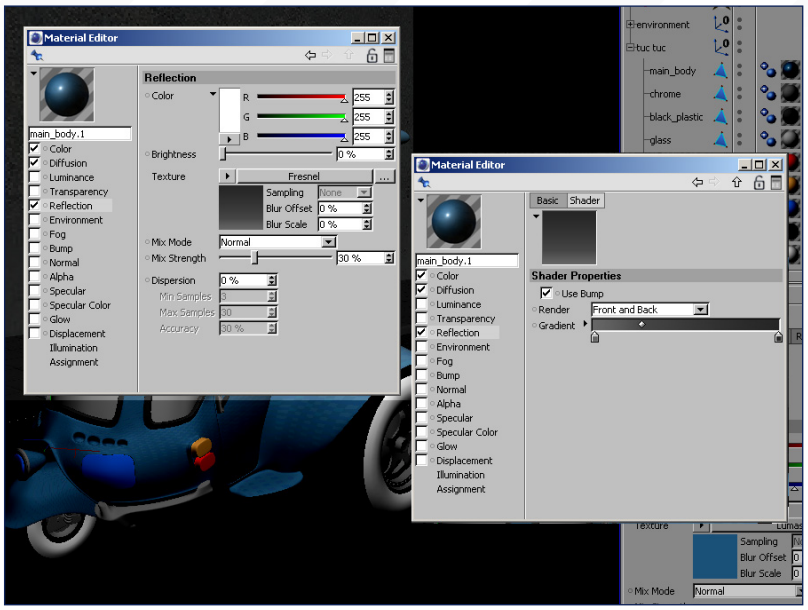


Fig 18

18. The next step is to enable the Diffusion Channel. This channel is used to have a control of light and dark areas. Load the “Fresnel” effect as shown in stage 1 of Fig.18. The Fresnel is like a gradient but it effects your material, based on your geometry’s “normals”, in relation to the camera. It also helps your model stand out from the background by giving it a nice edge. Check the “Affect Luminance” box, as seen in stage 2, and then click on the Fresnel tab to change the colours of the gradient. Use the colours as shown in stage 3 of the figure.

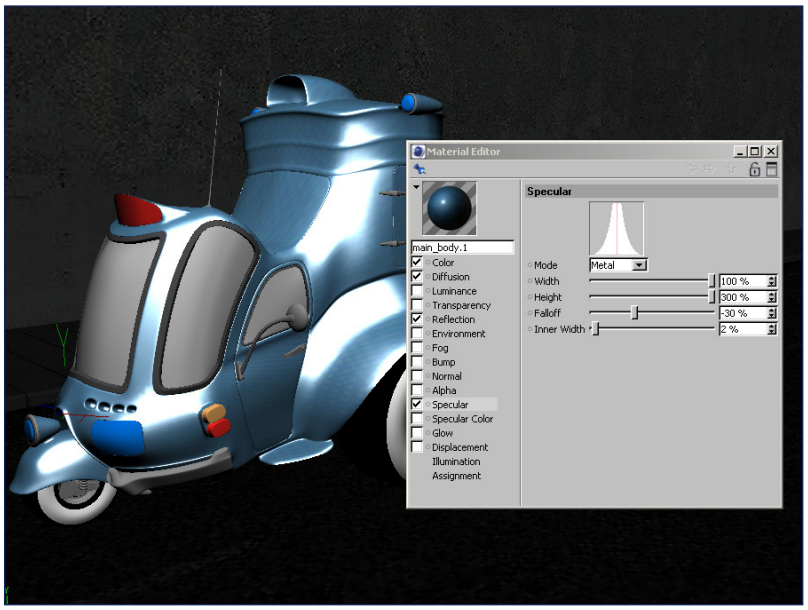
19. Now enable the Reflection Channel. Here, I also used the Fresnel Effect (Fig.19). If you want to blur the reflection you have to increase the percentage of dispersion, but this will increase the rendering times (the larger the value, the longer the render time), so for this reason I left it at 0%.

Fig 19



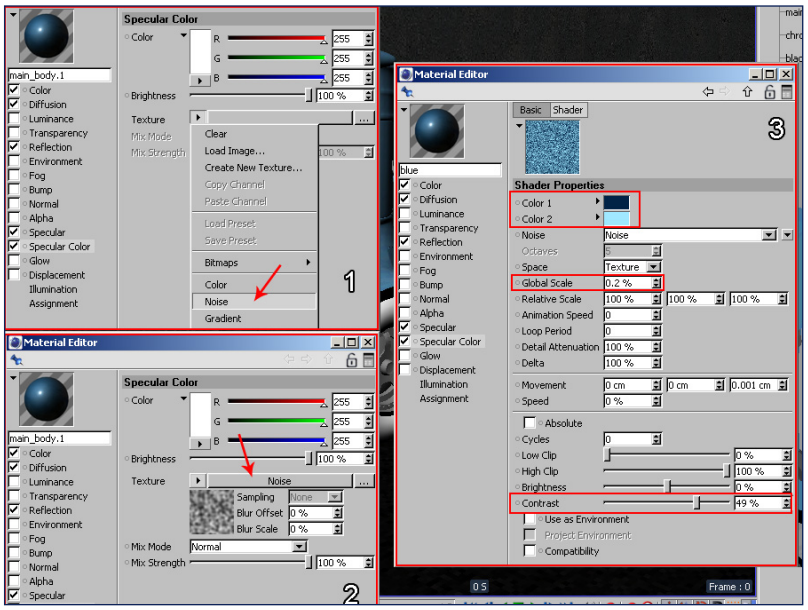
20. Let's now take care of the Specularity, so enable the Specular Channel. Set the Mode to Metal and then change the parameters, as shown in Fig.20.

Fig 20



21. To make the shader more realistic, also enable the Specular Colour Channel. Load the Noise effect, as seen in stage 1 of Fig.21. This effect will give the shader the typical grain of car paint. Click on the tab to change the properties of noise (Stage 2). In stage 3, you will notice that I changed the colours; the first colour is a dark blue and the second one is a light blue. Of course, if you are using a different colour for your car paint, choose the right tint for the noise effect. I also changed the Global Scale to 0.2% and the value of the Contrast. This concludes the main_body shader.

Fig 21



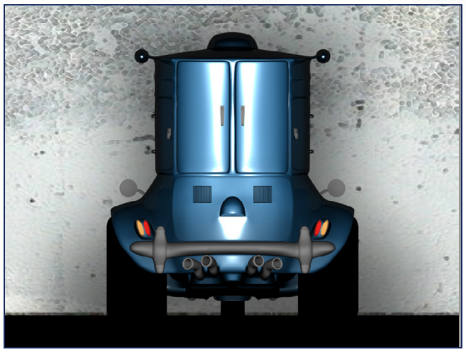
That's all for this first part. Next month we will continue looking into creating the rest of the shaders.

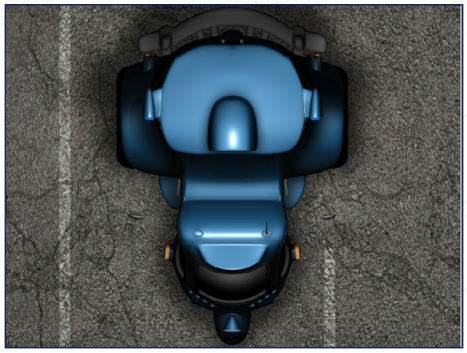
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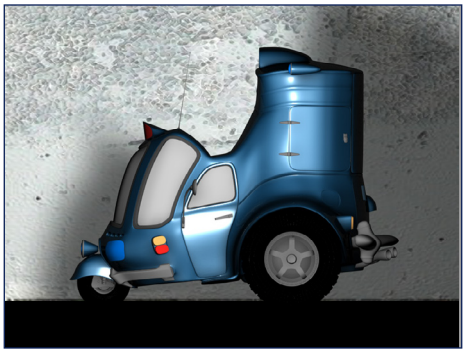
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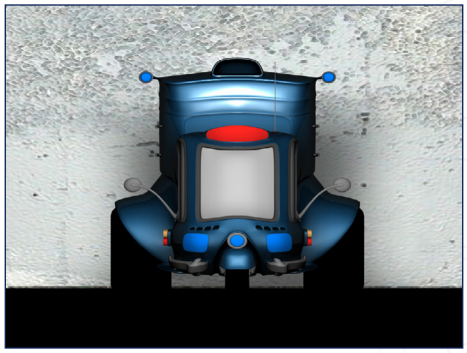
Tutorial by:
GIUSEPPE GUGLIELMUCCI & NIKI BARTUCCI

For more from this artist visit:
www.pikoandniki.com
Or contact them:
niki@pikoandniki.com













Tuc-Tuc

Maya

Is our new precise, step-by-step tutorial which will begin with a vehicle model and cover the principals of applying shaders, placing it in a simple scene and following with a two-part section on both lighting and rendering. The tutorial will begin by creating and applying materials for the various parts of the car, such as glass, chrome and tyres, as well as texturing some simple geometry that will make up a scene. It will then move onto lighting where the focus will be on setting up a lighting rig and the various parameters connected to this. Finally the series will culminate with a section on rendering, where the aim will be to finish with a polished image. The schedule is as follows:

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Issue 021 May 2007
Rendering Part 1

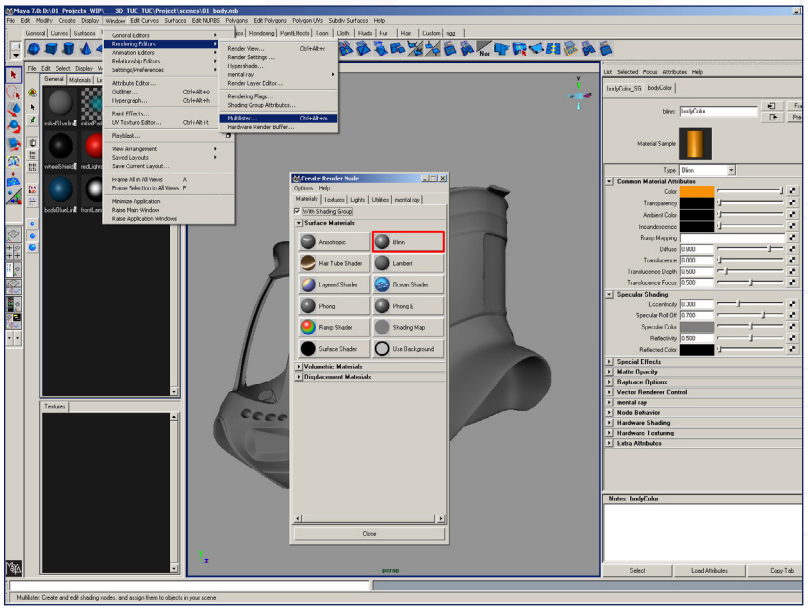
Issue 022 June 2007
Rendering Part 2

Enjoy ...

Applying Materials & Shaders - Part 1

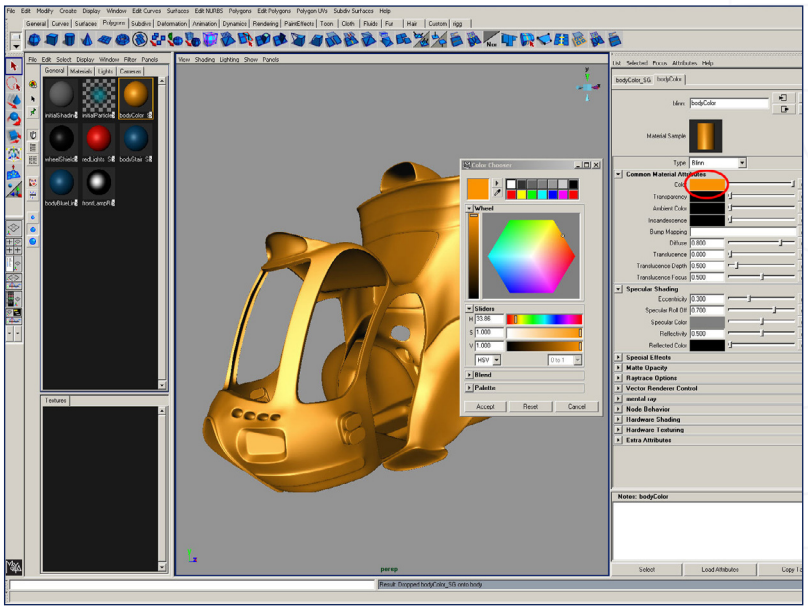
Welcome to our new tutorial. In this new set of lessons we're going to apply shaders and materials on a 3D model, set up lighting and rig using HDRI (High Dynamic Range Images) and rendering. In the first two parts we are applying shaders and materials, so let's begin. The first part will be mostly basic because I want everybody who's following this tutorial to get used to the interface, tools and techniques, rather then focusing on shaders. The last part: Applying Materials & Shaders Part 2 will focus more on shaders then GUI.

Fig 01



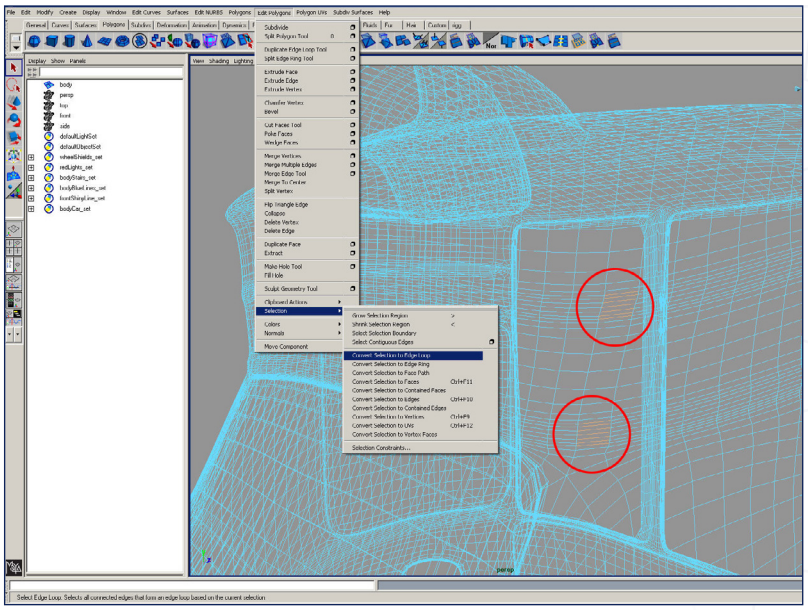
1. Since I have no concept art to follow I am pretty much free to choose any colours I want for my car. First of all I shall add the main colour, which will be the chassis of the vehicle. Open the Multilister window, then create a new material, "Blinn", using Edit > Create (Fig.01).

Fig 02



2. In order to change the colour of the material, double-click on the newly created Blinn. It will open the attribute window of the Blinn. Here you can add or change all the attributes for this material. You can change the transparency, or add a map on transparency. You can change the reflection ratio, specular colour and so on. By changing the Diffuse, Opacity, Specular Colour and Specular Roll Off, you can transform this material into Glass, Steel, Wood, Rubber, etc. We need a glossy material to reflect the environment and the default settings are pretty good for the chassis. So, we'll leave everything as it is and we'll change only the colour. Click on the colour and the "Colour Chooser" window will open, as in Fig.02. Choose an orange colour, or another colour if you want something different, and hit 'Accept' when you finish. Then, with the middle mouse button, drag the Blinn from the Multilister Window onto the chassis and let it go.

Fig 03



3. I would like to have few more colour details on my chassis and for this I'm going to add 3

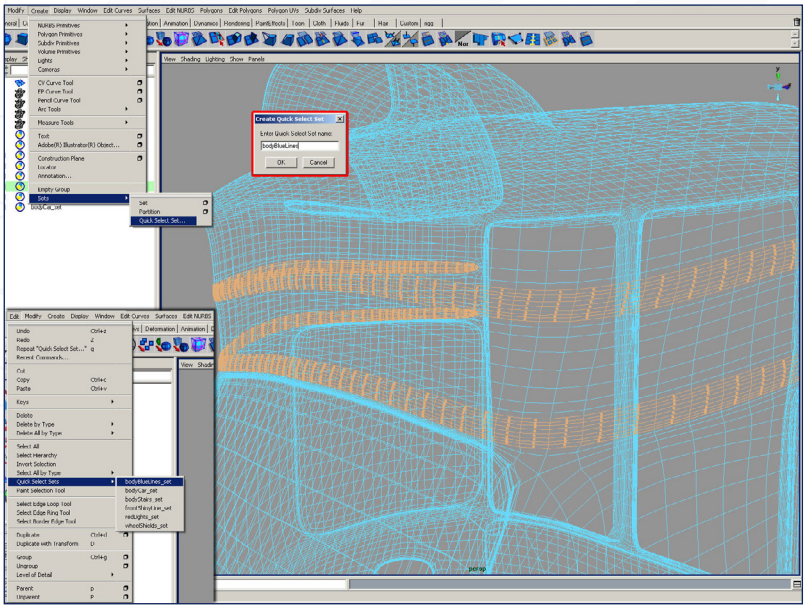


Fig 04

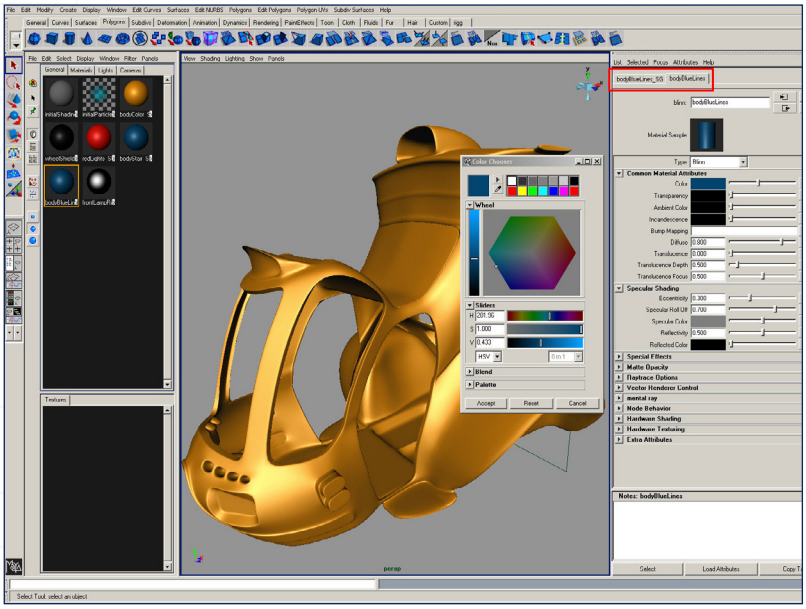


Fig 05

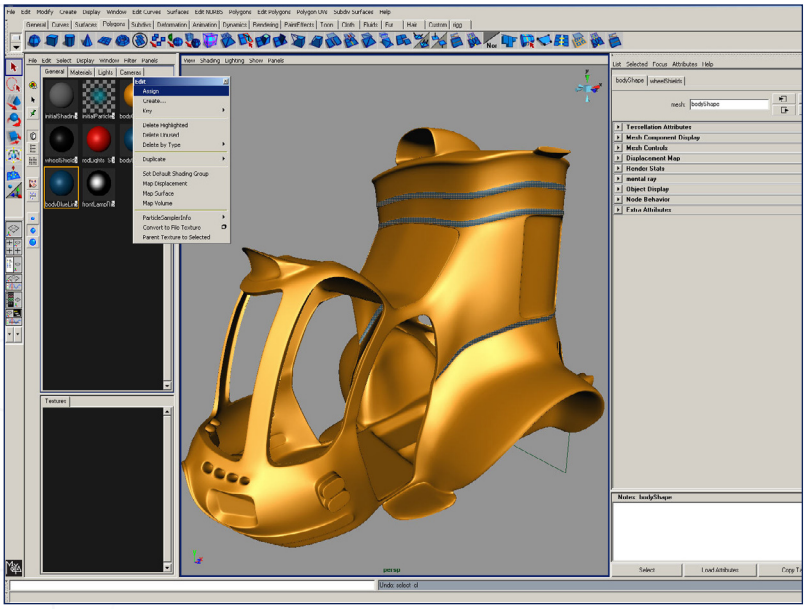


Fig 06

blue lines. Two on the top of the chassis and one right above the wheel shields. To do this I have to create a selection with all the faces I want to change. Select 7 edges from the middle of each and hit “Convert Selection to Edge Loop”. This will create a ring of 7 edges going all around the top of the chassis. Now because I cannot add a colour to the edges, only to faces, I have to convert my selection to faces. Hit “Convert Selection to Faces”.

4. With all the faces still selected we’re going to create a “Quick Select Set”. This new set is very useful, especially when we are using a single mesh and you want to add more materials on the same mesh. Now you can select those faces whenever you need to, by going in Edit > Quick Select Sets > bodyBlueLines_set or any other set of edges, faces, etc. you’ll ever create, as in Fig.04. I’m sure you’ll find this tool very useful for texturing, modelling, etc.

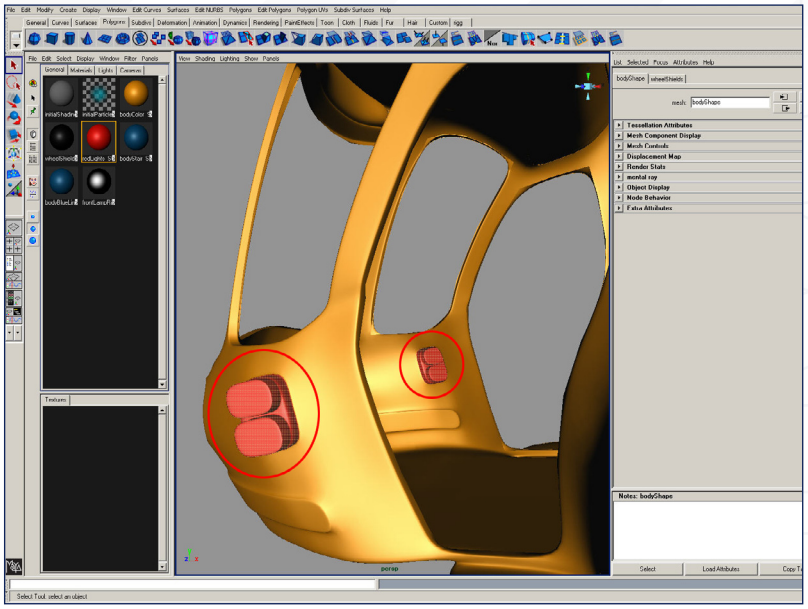
5. The next step is to create a new Blinn material and to change the colour into blue using the same steps as in section 2. Do not change any attributes from the blue line material since it will remain part of the chassis. The only thing that’s changing is the paint, from yellow to blue. It would also be good to change the name of every new material in order to find it easily when you want to change something. You can do this by adding a new name into the “Blinn” and “ShadingEngine” sections, as highlighted in red in Fig.05. You’ll notice that the name will also be changed in the Multilister Window. If you see that Maya is adding a number after your new rename, e.g. “bodyBlueLines1” or “bodyBlueLines_SG1”, this means that you have another object, SG (shading group), etc. in the scene that is using the same name. This happens very often and there are standards of naming/renaming.

6. Select the faces that you want to turn into blue, using Edit > Quick Selection Set. Assign the new material by clicking onto the material in the Multilister Window and then Edit > Assign.

Notice that I have used another method to assign a material, since dragging the material with the middle mouse button is not helping me too much in this situation. I have to assign one material to 3 different lines which are part of the same object (Fig.06).

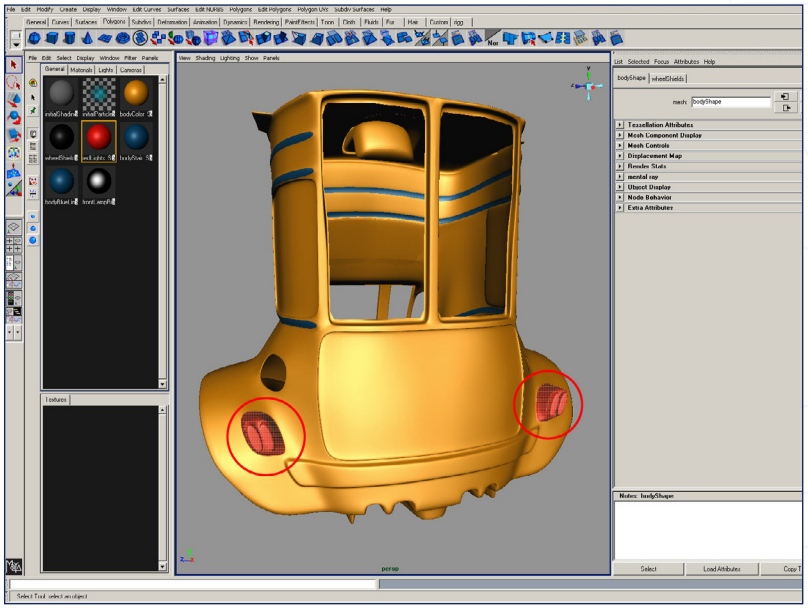
7. Now let's make the red lights at the side. For this you'll have to select the faces first, then apply another new material. Here we can use a combination of methods to select the faces. First select the edges that are going all over the lights, then "Convert Selection to Edge Loop". Then "Convert Selection to Faces". Make sure you have selected all the faces. Apply the new red material and that's it. You may find some faces that are not selected. Select those faces too and then apply the material. Once you've selected all the faces, don't forget to create a new "Quick Selection Set" (Fig.07).

Fig 07



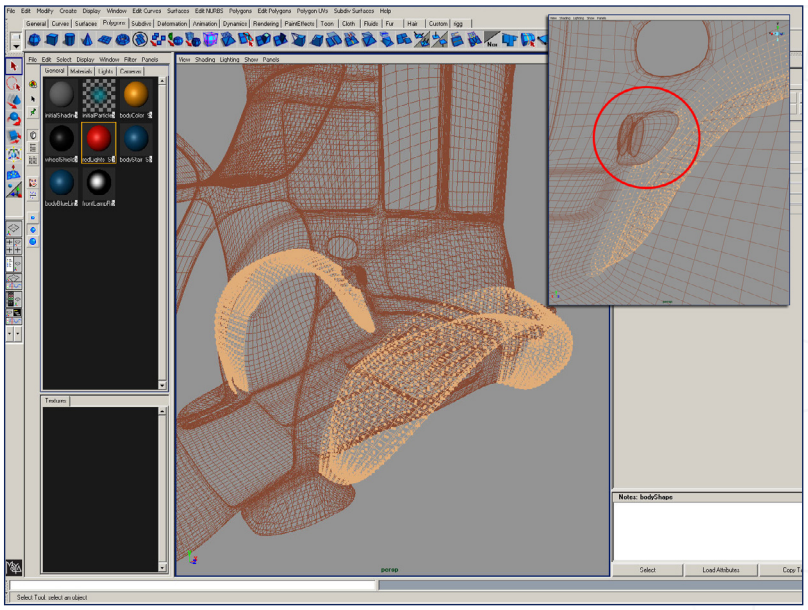
8. Using exactly the same technique, make the red lights at the back (Fig.08). **Note:** The red material has exactly the same attributes as the blue and orange material. Only the colour is changed to red.

Fig 08



9. For the wheel shields we cannot use the conversion methods used above so this will be a little more painful. To assign the black material onto the wheel shields you'll have to select the faces manually. It won't take too long but you have to pay attention to all the other faces that you don't want to select. This may give you a bit of headache if you're not quite used to navigating in a wireframe mode. I hope you'll finish quickly and don't forget to save the selection as 'Quick Selection Set'. This tool is made especially for these kinds of pains and it saves a lot of time. Please note that my face selection is going around the back red lights. They are already coloured in red and I want to keep them this way (Fig.09).

Fig 09



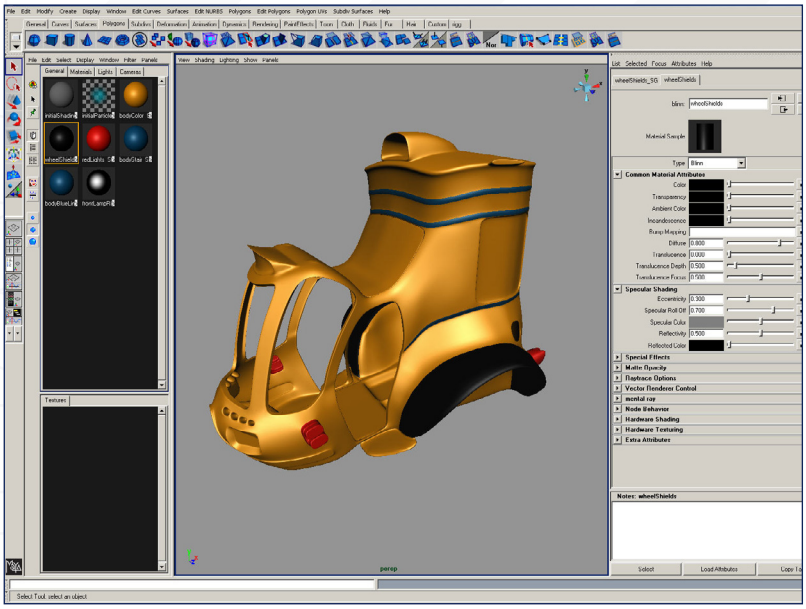


Fig 10

10. Now create a new blinn material and assign it to the selected faces from the wheel shields (Fig.10).

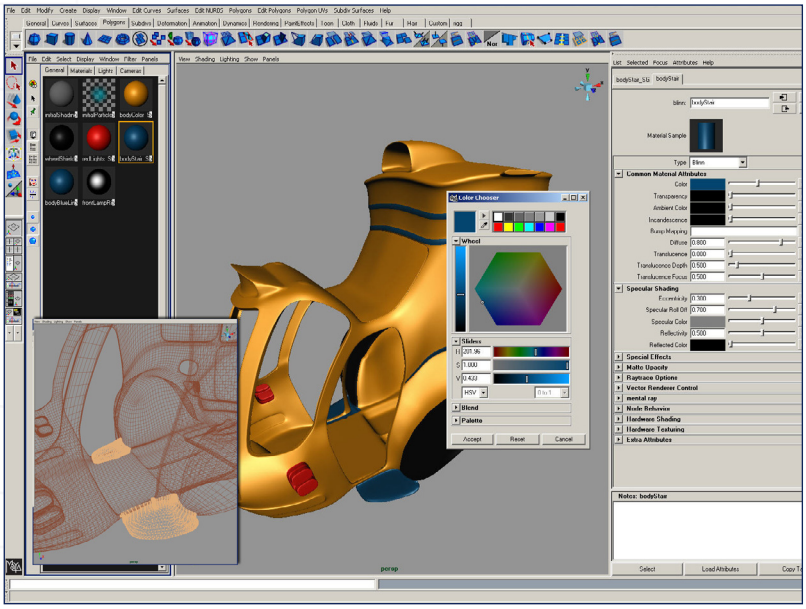


Fig 11

11. We're now going to take care now of the steps. Select all the faces of the steps, create a new material and assign it to the steps.

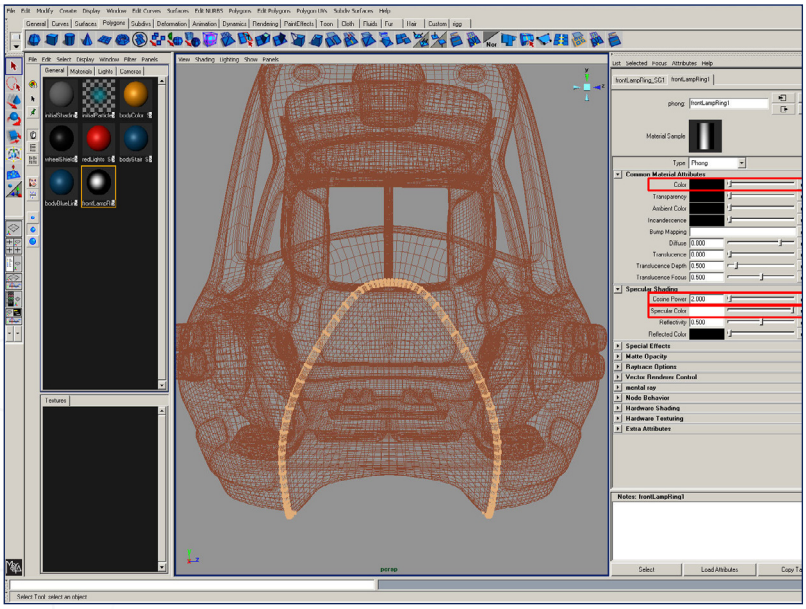


Fig 12

12. The final part is to add a shiny thin chrome line on the front. For this part I have selected the edges and I've used "Convert Selection to Edge Loop" then "Convert Selection to Faces". I also had to deselect some of the faces that were selected, so pay attention to what's selected. For this shiny line I have used a new material, "Phong", as in Fig.12. I usually use this for all kinds of particularly shiny materials, like glass, diamonds, steel, chrome materials, mirrors, etc. The "Cosine Power" attribute is very good for this type of glossiness because it's not linear, like the "Specular Roll Off" attribute, from the Blinn-type material. Also notice that the material is black in colour. This way I'm having

a powerful contrast between the dark and shiny parts. The highlights are made by the “Specular Colour”. This is a powerful material and can be used as a base for many other materials.

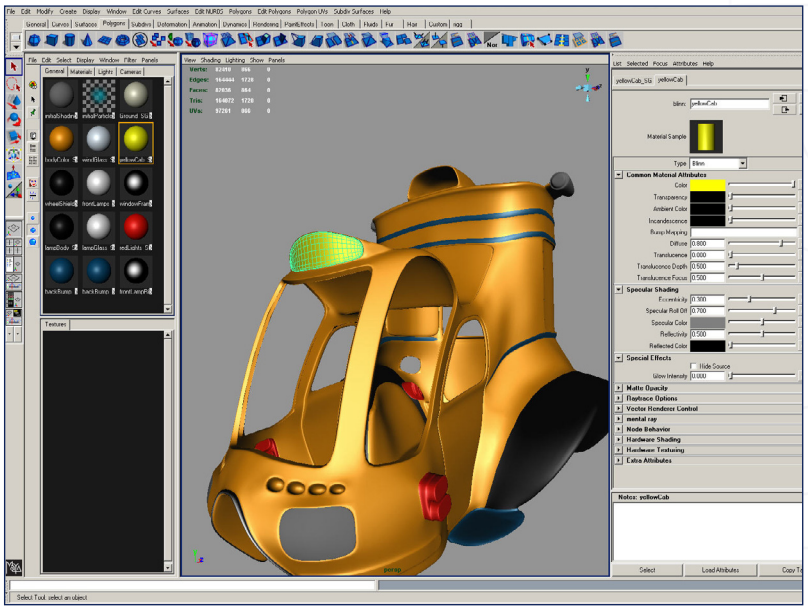
13. Now that I’m done with the chassis I’ve made a quick render to check that everything is as I expected it to be. I have used HDRI (High Dynamic Range Image) for this render, provided free together with HDRShop (I want to thank them for this, because they’re doing a very good job there) and Final Gathering, without any other lights in the scene. I will not enter into the details of this right now since we’ll have two entire parts allocated to rendering and lighting (see following pages for renders).

Fig 13



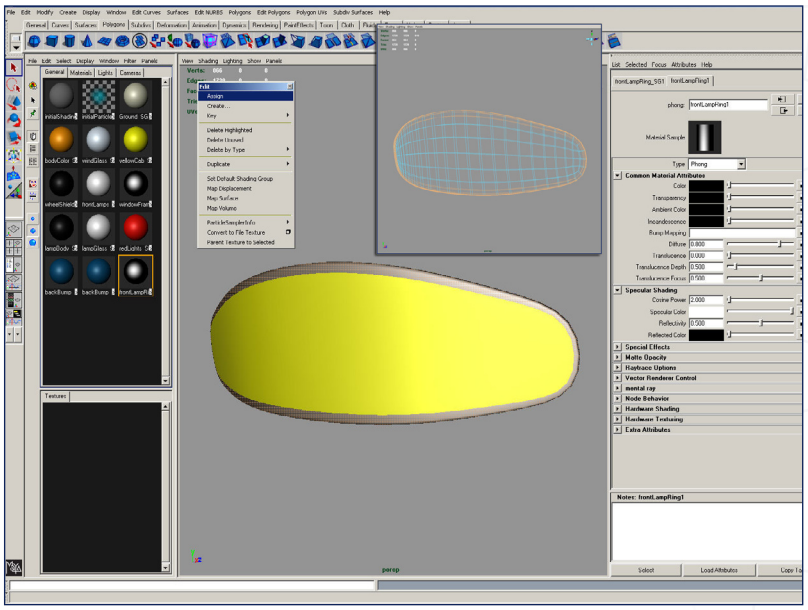
14. Now we’re going to make the cab sign for the top of the chassis. Firstly I want to make it completely yellow so I’ll add a yellow colour to the entire object, as in Fig.14.

Fig 14



15. Now I think a nice shiny line around this part will be good for the contrast between the entire chassis and this object. For this I’m going to select the edges, then using “Convert Selection to Edge Loop” and “Convert Selection to Faces”, I have selected the entire part I want to change. I’m going to create a similar Phong material, as the one used at the front part of the chassis, because I have to have exactly the same chrome material (Fig.15).

Fig 15



Now we’ve finished with the simple materials, next we’re going to create some light effects without using any lights in the scene. I’ll use another part of the material attributes, named Special Effects. I want to create the impression that my lights are on. For this, we’re going to use glow and optical FX attributes but this and many more new materials, like “Layer Shader”, “Glow Shader” and “Ramp Shader”, we’ll be covered on the next month tutorial. Until then, take a look at the very first renders on the next page.

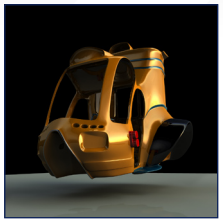
TUC TUC Designed & Modelled by: RICHARD TILBURY

Tutorial by: BOGDAN HORDUNA

For more from this artist, contact them:

suiobo@yahoo.com

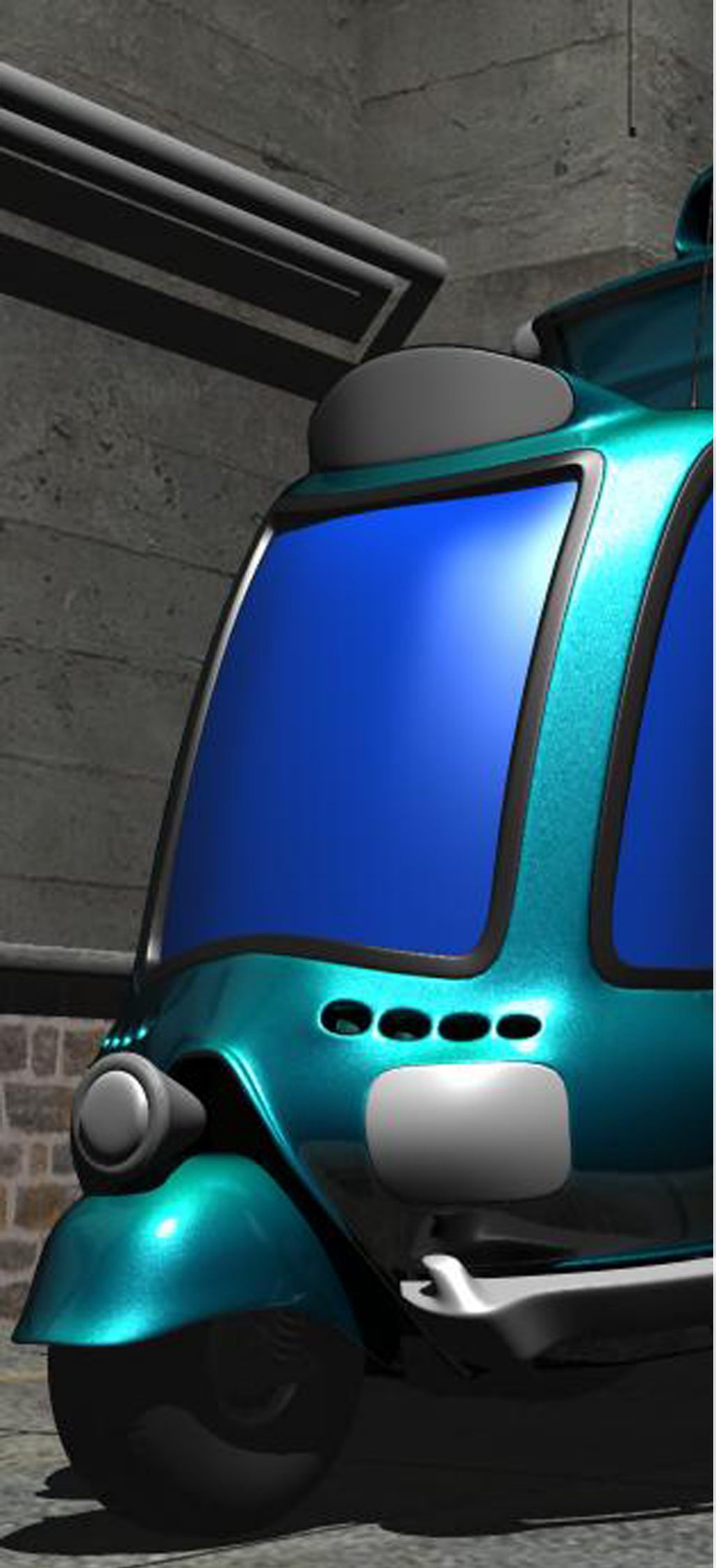










Tuc-Tuc

SOFTIMAGE | XSI

Is our new precise, step-by-step tutorial which will begin with a vehicle model and cover the principals of applying shaders, placing it in a simple scene and following with a two-part section on both lighting and rendering. The tutorial will begin by creating and applying materials for the various parts of the car, such as glass, chrome and tyres, as well as texturing some simple geometry that will make up a scene. It will then move onto lighting where the focus will be on setting up a lighting rig and the various parameters connected to this. Finally the series will culminate with a section on rendering, where the aim will be to finish with a polished image. The schedule is as follows:

Issue 017 January 2007
Applying Materials & Shaders Part 1

Issue 018 February 2007
Applying Materials & Shaders Part 2

Issue 019 March 2007
Lighting Setup & Rig (with HDRI) Part 1

Issue 020 April 2007
Lighting Setup & Rig (with HDRI) Part 2

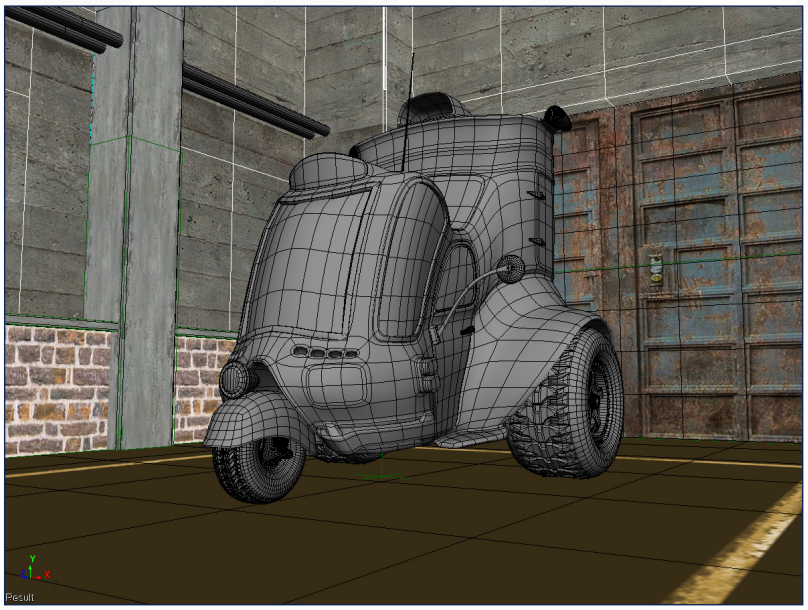
Issue 021 May 2007
Rendering Part 1

Issue 022 June 2007
Rendering Part 2

Enjoy ...

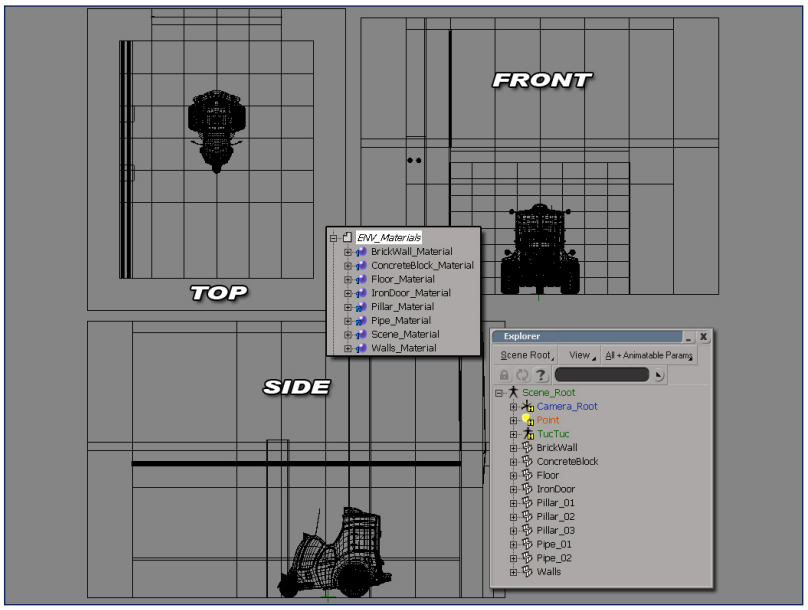
ASSIGNING MATERIALS & SHADERS - PART 1

Fig 01



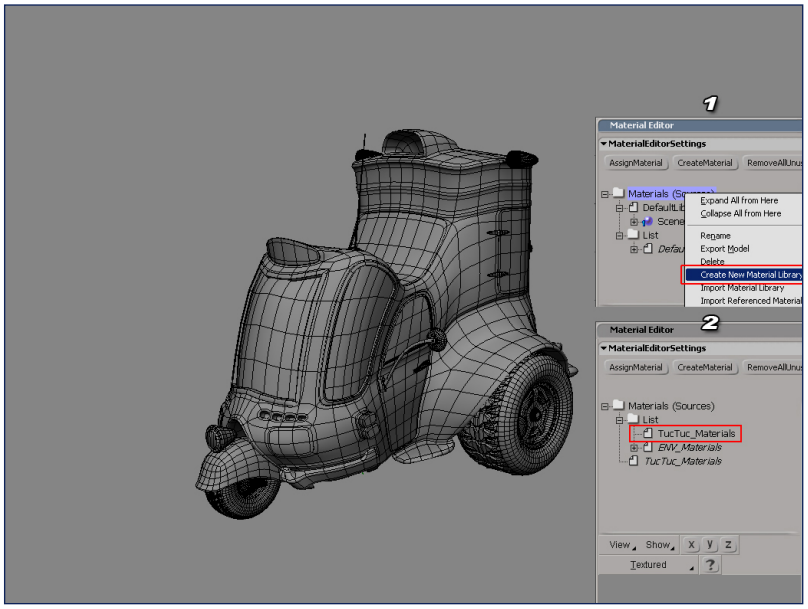
1. Let's start inspecting the scene and its elements. Fig.01 is captured from the Camera view (headlight and wireframe on shaded were enabled for visualisation's sake). As you can see, a small environment was created to put the vehicle in. We will optimize this environment later on in other parts of the tutorial if needed; for the moment you just need to know that it is made of simple geometry (like boxes and cylinders) with some simple materials and photographic textures on it.

Fig 02



2. Let's have a look at Fig.02, which shows the scene from different points of view (top, front and side). The scene is a simple box without the top base (this is because we will make the light cast from above to create a nice lighting atmosphere). In the lower right part of Fig.02 you can see the Explorer view (you can bring it up with the "8" short-cut key), with all the elements which make up the scene. The TucTuc element is shown in green with a small man icon because it is a Model (it's like a mini-scene within the main scene). The TucTuc model contains all the objects which make up the vehicle. In the centre of Fig.02 there's a capture of the Material Editor (RV); it shows a library called "ENV_Materials" which was created to contain all the materials and shaders of the environment.

Fig 03



3. Let's start creating the materials for the vehicle. First of all, hide everything but the vehicle meshes (click with the Middle Mouse Button on the TucTuc model in the Explorer view and use the Shift + Ctrl + H shortcut to hide all the rest). Once you have only the TucTuc model in the scene, open the Material Editor (View > Rendering/Texturing > Material Editor), right-click on the Materials (Sources) label and click on Create New Material Library, as shown in part 1 of Fig.03. Now right-click on the newly created library, and rename it "TucTuc_

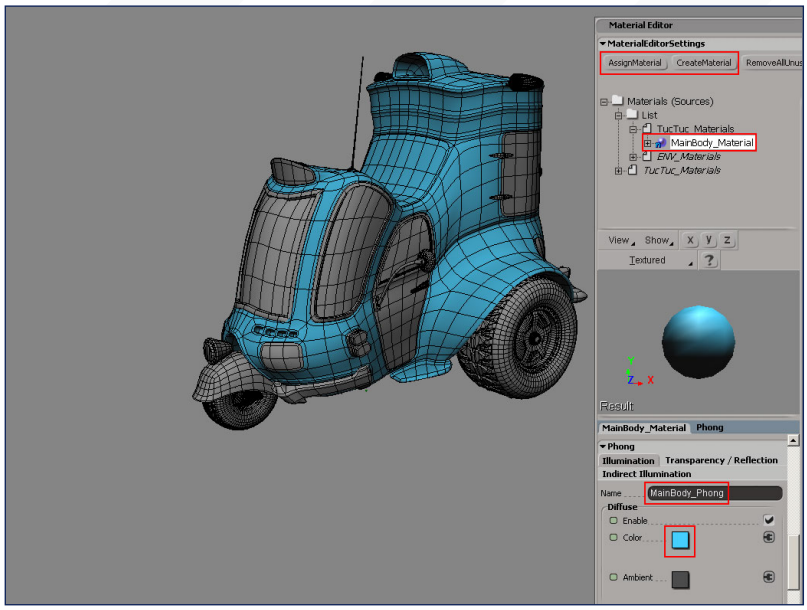


Fig 04

Materials", as seen in part 2 of Fig.03. This new material library will contain all the materials and shaders of the vehicle.

4. Select the main body of the vehicle (Fig.04). Click on the Create Material button in the Material Editor. This will create a new, standard material. Right-click on it in the material library and rename it "MainBody_Material". In the Phong properties, enter the new name "MainBody_Phong" and change the grey Diffuse colour to any colour you like. The colour of the main body will update accordingly in the viewport, as shown in Fig.04.

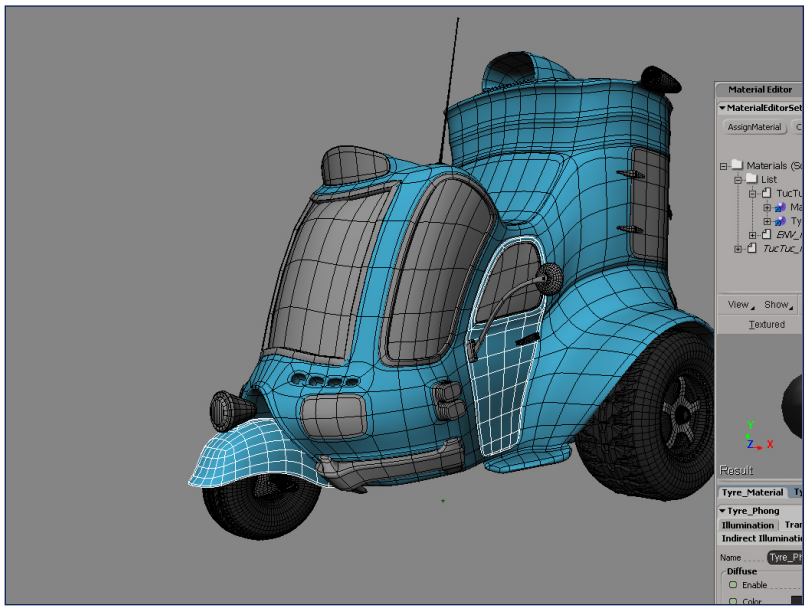


Fig 05

5. Select the door and the wheel cover, as shown in Fig.05, and click on the Assign Material button in the Material Editor. This will start a "picking session" and the Material Editor will be closed; use the Ctrl + Tab shortcut to re-open it and click on MainBody_Material in the Material Library of the Material Editor. This will assign the same material of the main body to the selected elements.

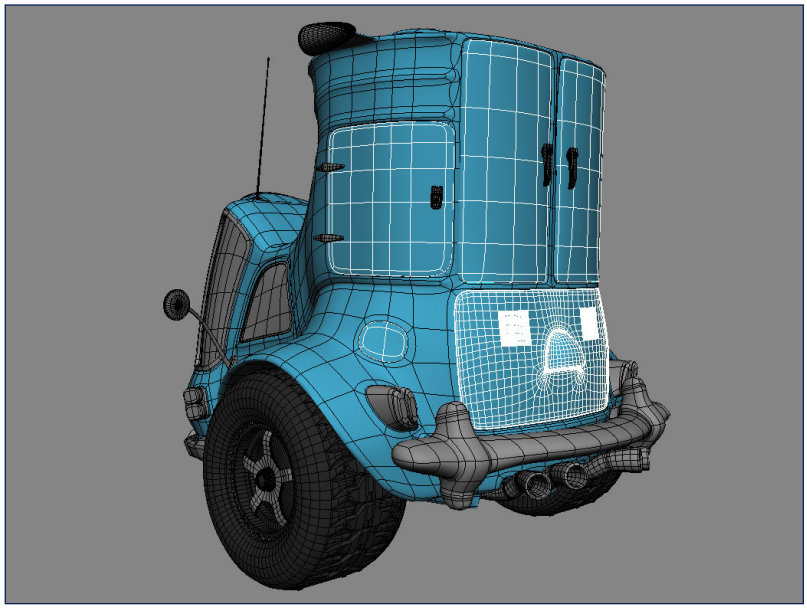
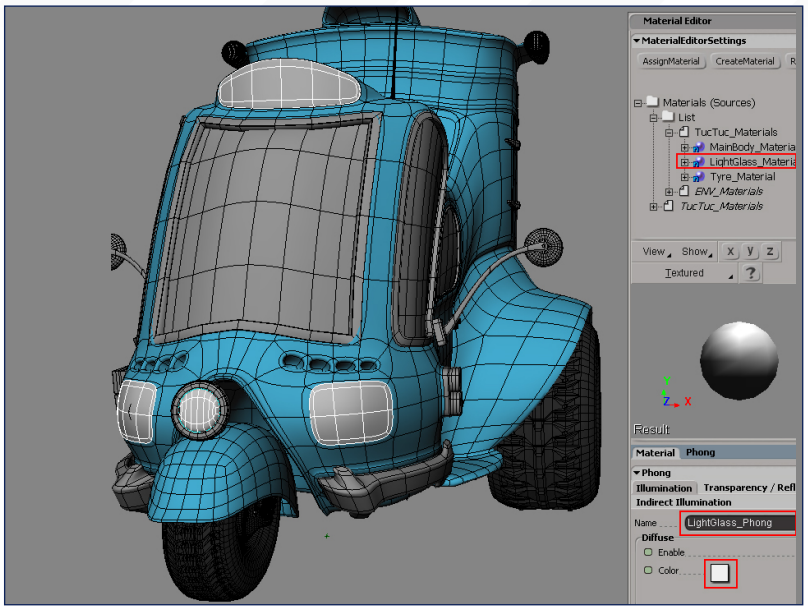


Fig 06

6. Select all the other components that will have the MainBody_Material, and repeat the last step (click on Assign Material and pick the MainBody_Material in the Material Library).

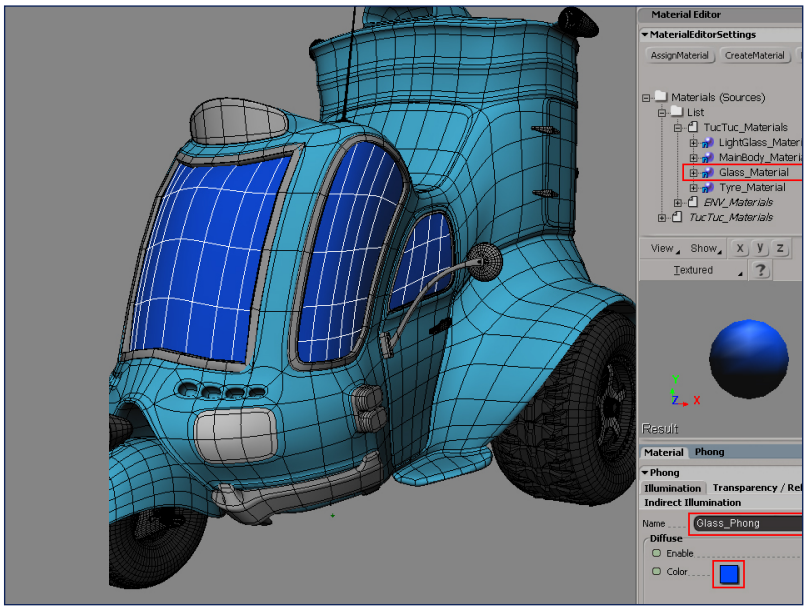
7. Now select the parts that will be made of transparent glass (Fig.07), create a new material called LightGlass_Material and assign it to them. You can leave its colour as grey, or maybe choose a lighter grey.

Fig 07



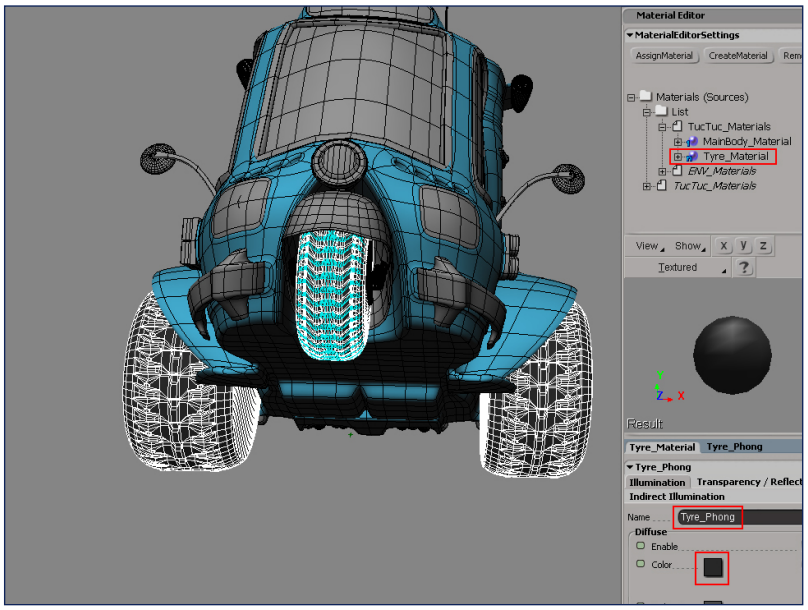
8. Create a new material called “Glass_Material” and assign it to the main glass mesh (marked with the white wireframe in Fig.08). In this case the colour was changed to blue, but these are just symbolic colours, we will alter them later.

Fig 08



9. Select the tyres and assign them a material called “Tyre_Material” and set its colour to a darker grey, as shown in Fig.09.

Fig 09



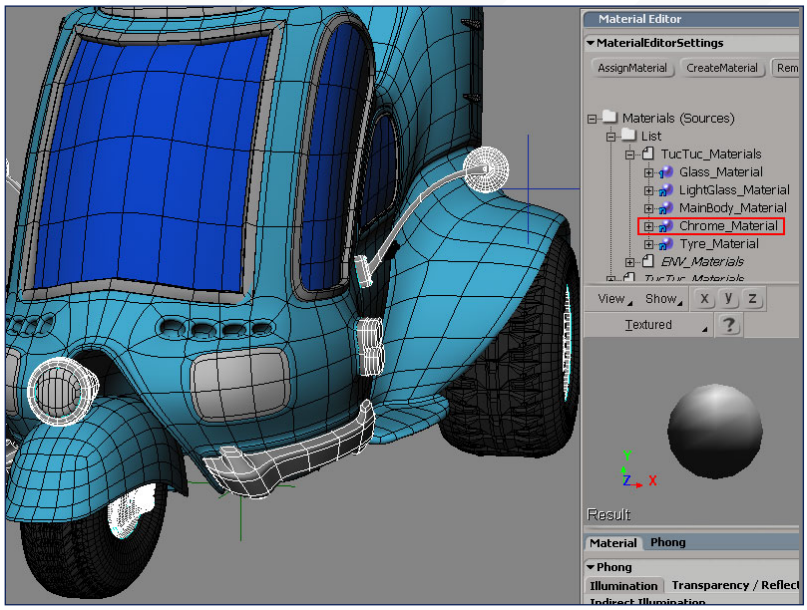


Fig 10

10. Add another material, called “Chrome_ Material”, select all the meshes that will be made of this kind of material and assign it to them (Fig.10).

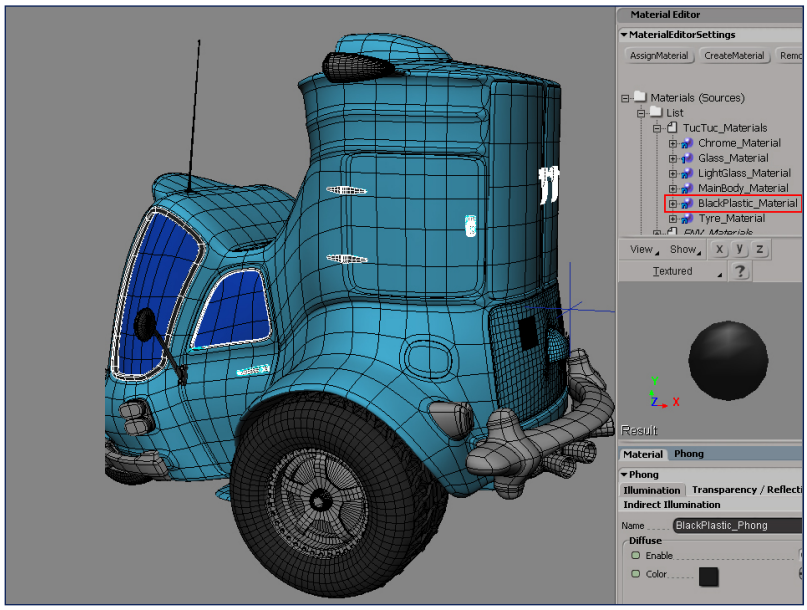


Fig 11

11. Create a “BlackPlastic_Material” and assign it to the meshes marked with the white wireframe in Fig.11. Change its colour to a very dark grey, almost black.

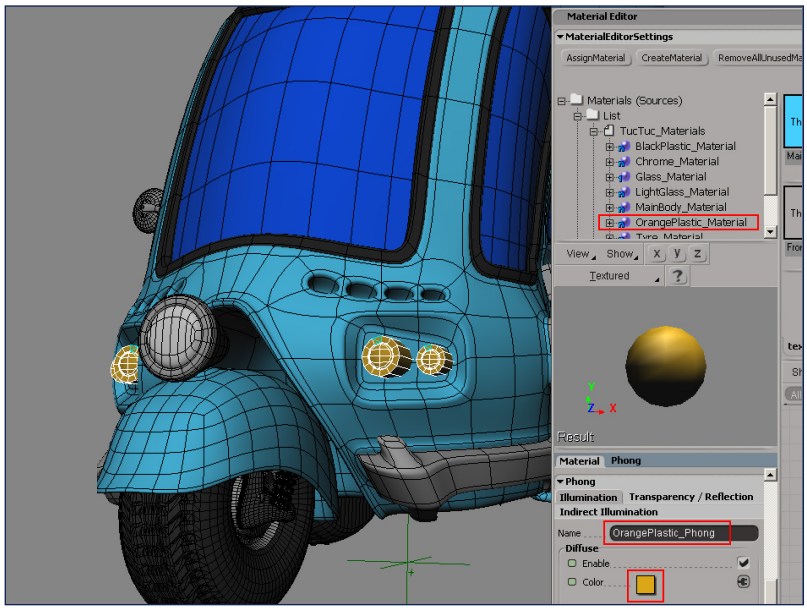
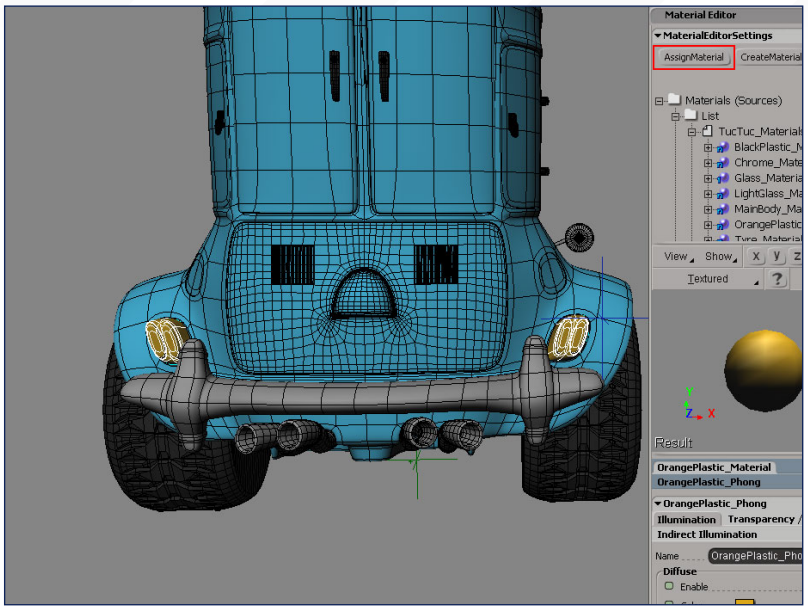


Fig 12

12. Select and hide (with the H shortcut key) the lights’ glass mesh. Select the inner components of the lights and assign a new OrangePlastic_ Material to them, as seen in Fig.12. Change its colour to a bright orange shade.

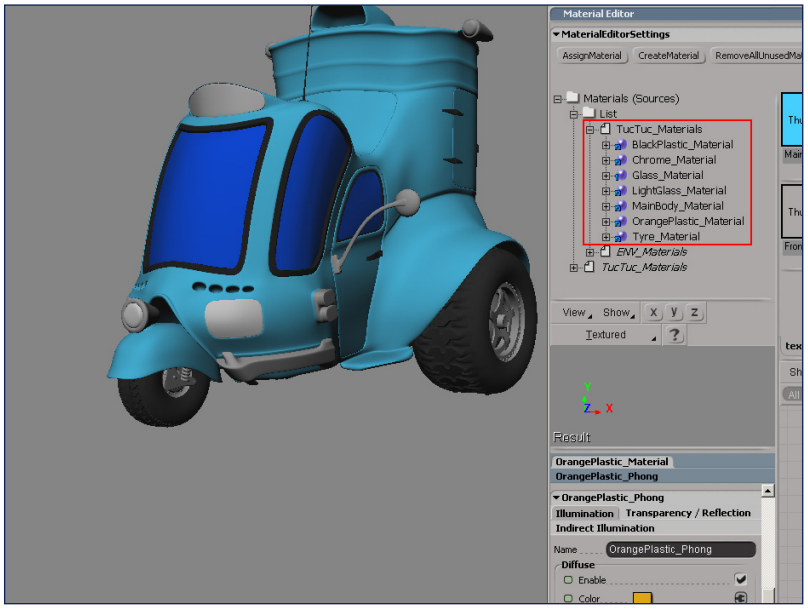
13. Assign the same OrangePlastic_Material to the back lights, as shown in Fig.13.

Fig 13



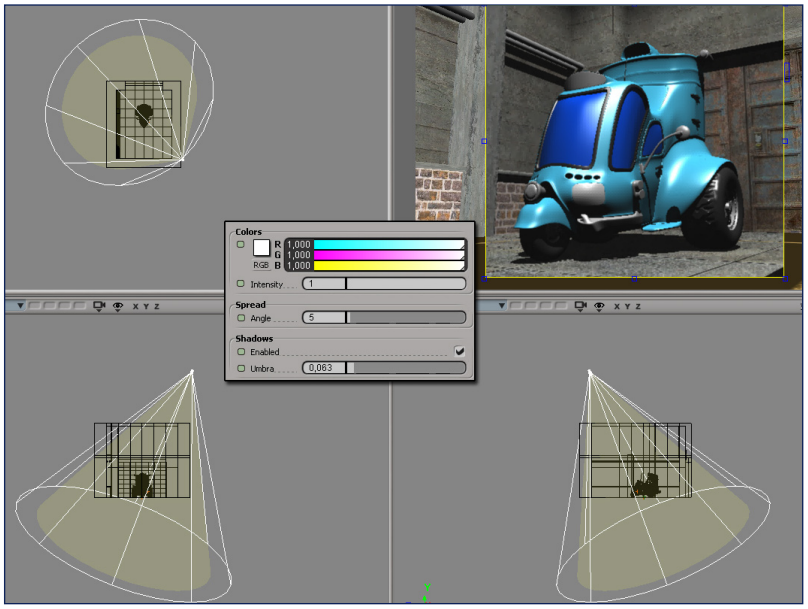
14. Let's recap everything: you should have ended up with a Material Library similar to the one in Fig.14 (it's composed of 7 different Materials; BlackPlastic, Chrome, Glass, LightGlass, MainBody, OrangePlastic and Tyre materials). Don't forget to check every side of your model to see if you have forgotten to assign the right material to any other hidden part of the model.

Fig 14



15. Now it's time to give the scene some light and check how it is going. Create a SpotLight and position it as shown in Fig.15. You can use the "B" shortcut key to enable some advanced controls on the SpotLight (you can alter the radius interactively in the viewports just by clicking and dragging the cursor over the SpotLight). In the centre of Fig.15 you can see the basic parameters of the SpotLight; pure white colour, Intensity = 1, Shadows = Enabled, Umbra = 0,063. In the upper-right part of Fig.15 there's a Render Region of the scene - it should look like that. Pretty horrible at the moment, isn't it?

Fig 15



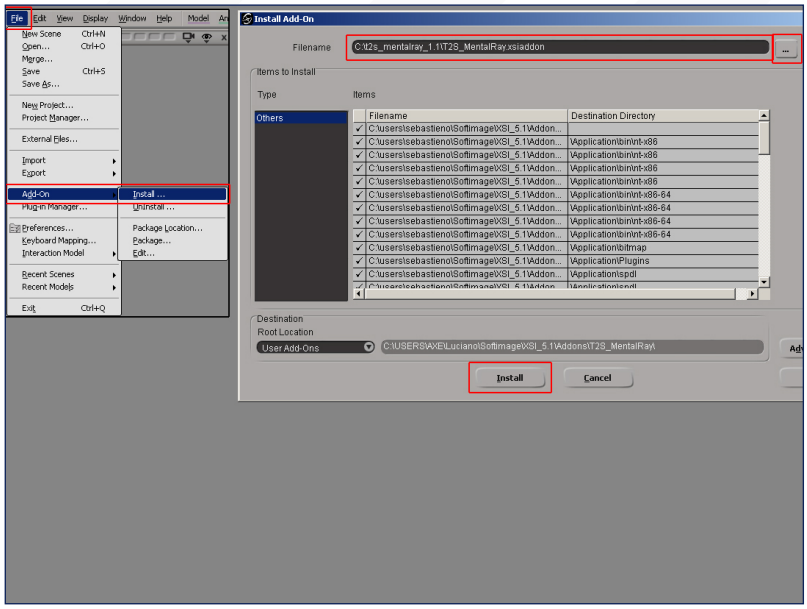


Fig 16

16. Let's start working on the most important shader of this scene: the car paint shader. We could try to build a car paint shader from scratch, and that would be an interesting topic; but we would have to deal with a tedious and mostly unresolvable problem: the extremely time-consuming blurry reflections of Mental Ray. In fact, one of the key aspects of a car paint shader is a nice blurry reflection all over the vehicle body and its chromic components. Creating nice, blurry reflections with Mental Ray is a "few-clicks" task, but unfortunately the render time goes up as you increase the quality of the reflection itself. We need something much faster, and with the same (if not better) quality, since we need to make constant changes to the overall look of the vehicle. This is why, in this tutorial, we will rely on a pre-made, high-quality car paint shader, which will be almost impossible to obtain by creating it from scratch (and in no way would we have the same fast render-times). You can download this shader (and a lot of other really nice shaders) for free at the Tek2Shoot website (http://www.tek2shoot.com/images/stories/articles_files/t2s_mentalray_1.1.zip - the guys at Tek2Shoot (www.tek2shoot.com) have created an XSI add-on which contains several unexposed Mental Ray shaders). We will use their Car Paint shader for our vehicle. Let's see how to install it. Download the file from the previous link, save it to your hard drive and un-zip it. Open XSI and from the File menu choose Add-On > Install. Click on the three-dots button shown in Fig.16, and locate the file you just un-zipped on your hard drive. Make sure that the Root Location is set to User Add-Ons and click on the Install button. This will install the new T2S shaders. Close XSI and launch it again to automatically load these new shaders.

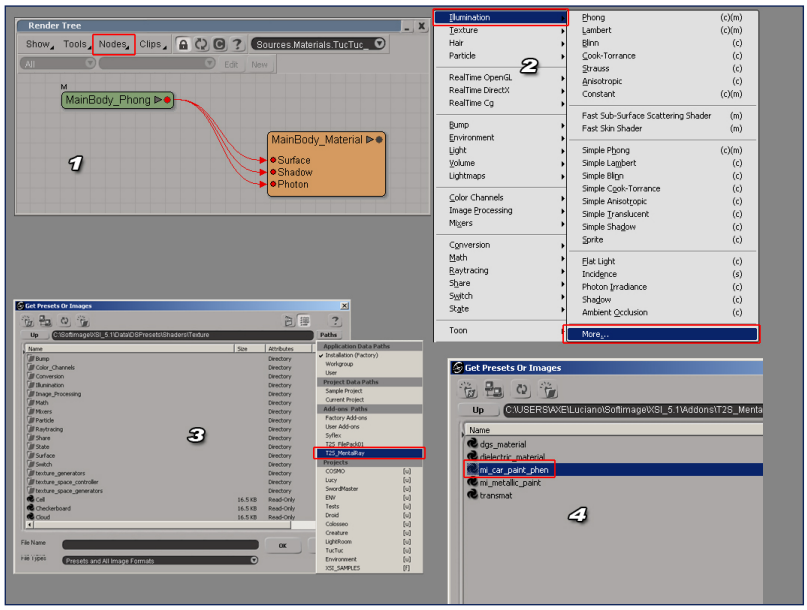


Fig 17

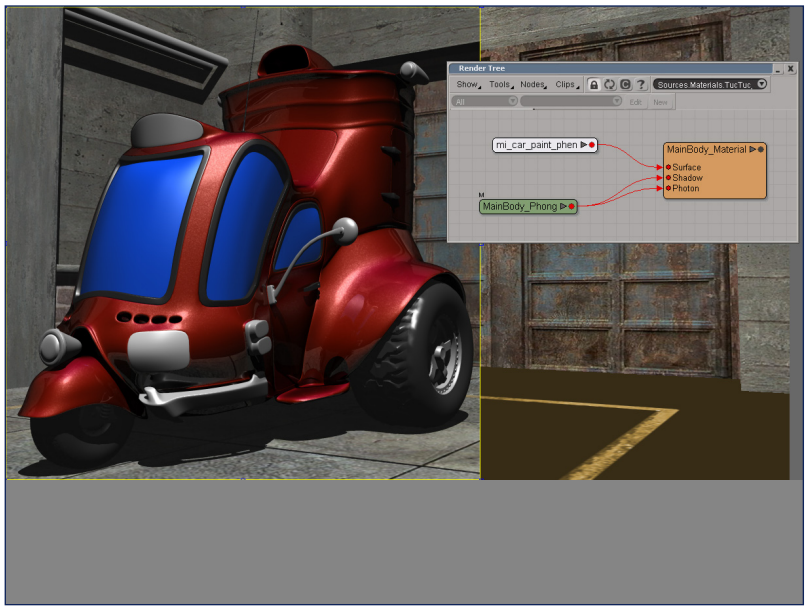


Fig 18

17. Select the vehicle's body and use the "7" shortcut key to open the Render Tree. It will show the MainBody_Material we created previously (if it doesn't, hit the Refresh icon on the Render Tree to reload it). Click on the Nodes menu (part 1 of Fig.17); click on Illumination >

More (part 2 of Fig.17); click on the Paths button in the file browser and choose T2S_MentalRay from the pop-up list (part 3 of Fig.17); finally, choose the mi_car_paint_phen file from the browser, as shown in part 4 of Fig.17.

18. Go back to the Render Tree and plug the newly created mi_car_paint_phen node to the Surface node of the MainBody_Material. It is just as simple. You can see this for yourself by dragging a render Region in the Camera viewport (Fig.18).

19. If you double-click on the mi_car_paint_phen node in the Render Tree, you can alter its parameters. Let's see the most important ones, shown in Fig.19:
2 - Base - the base colour of the material;
3 - Edge - the colour shown on the edges of the model (where the material tends to go darker);
4 - Lit Colour - the colour shown in the area of the model hit by the light source;
5 - Falloff parameters - used to make the relative effect narrower or wider (for example, the effect on the edge colour).
For a complete description of all the parameters, check out this website:
http://www.lamrug.org/resources/doc/paint.html.

20. Now you can customise this wonderful car paint shader with the colours you like. In this case, the Base colour was set to a bluish colour (RGB = 0, 150, 204). The Lit colour was set with a brighter colour (RGB = 0, 248, 182). The Lit Falloff value was set to 4,632. You can see the result in Fig.20.

21. Now let's take care of the specularity. If you click on the second tab of the mi_car-paint_ phen shader, you will see the parameters that control the specularity of the shader (Fig.21). This aspect is split into two different channels; Primary Specular and Secondary Specular. The Colour parameters control the colour of the two channels of specularity, the Weight parameter is a global multiplier of the effect and the Exponent controls the Phong exponent for the specularity

Fig 19

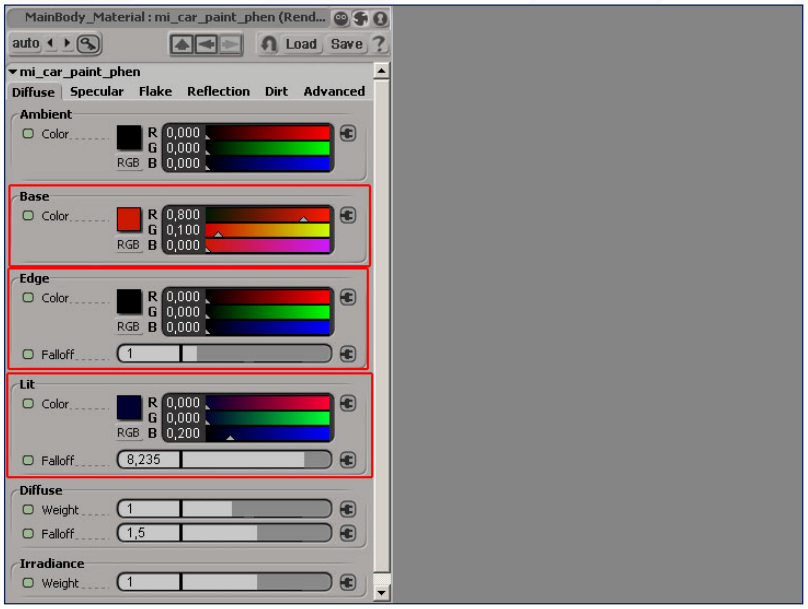


Fig 20

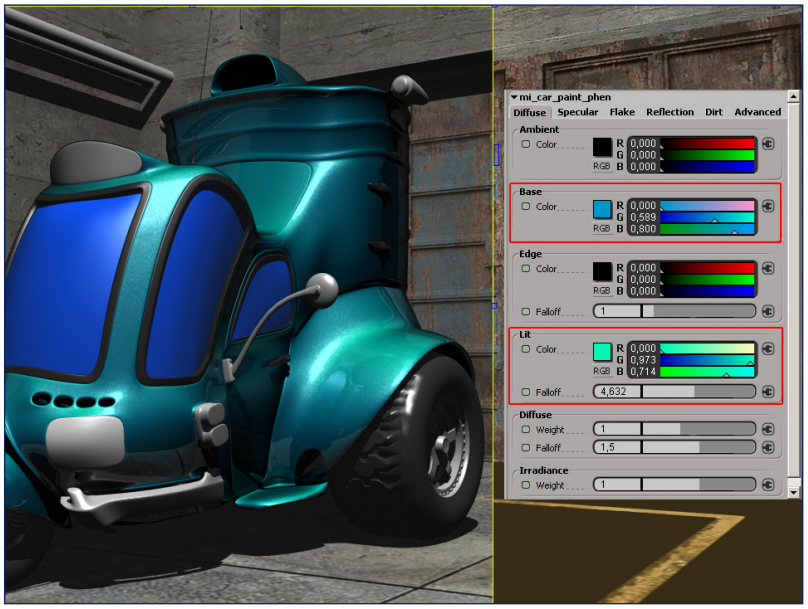
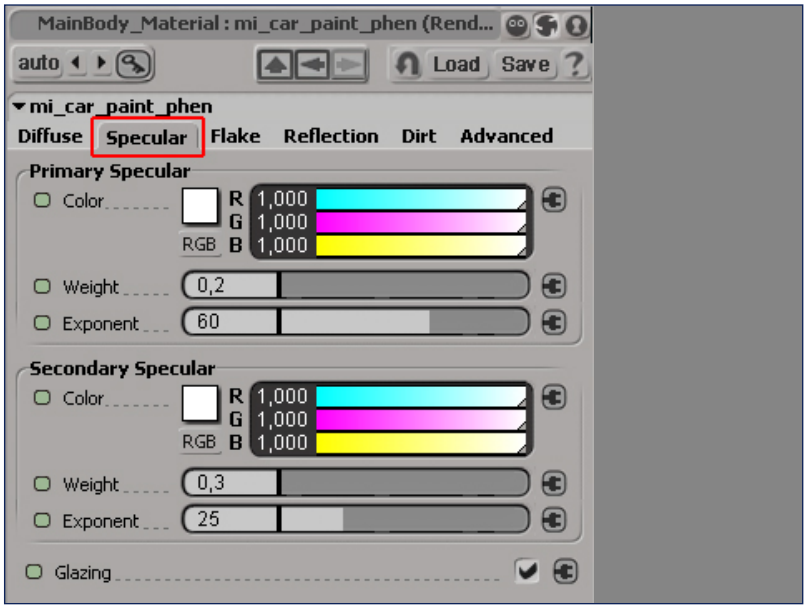


Fig 21



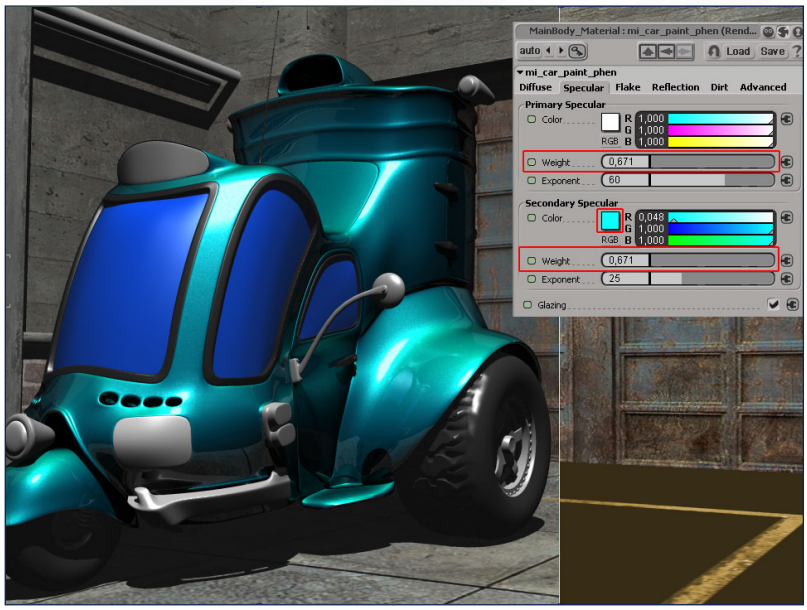


Fig 22

effect. Lastly, on the bottom of this tab, there's an option called "Glazing". When on, this helps in creating the shiny and polished car paint effect.

22. Set the Primary and Secondary Specular Weight to 0,671. The Secondary Specular Colour was set to an RGB = 12, 255, 255 colour. Of course, if you are using a different overall colour for your vehicle, choose the right tint for the Secondary Specular Colour.

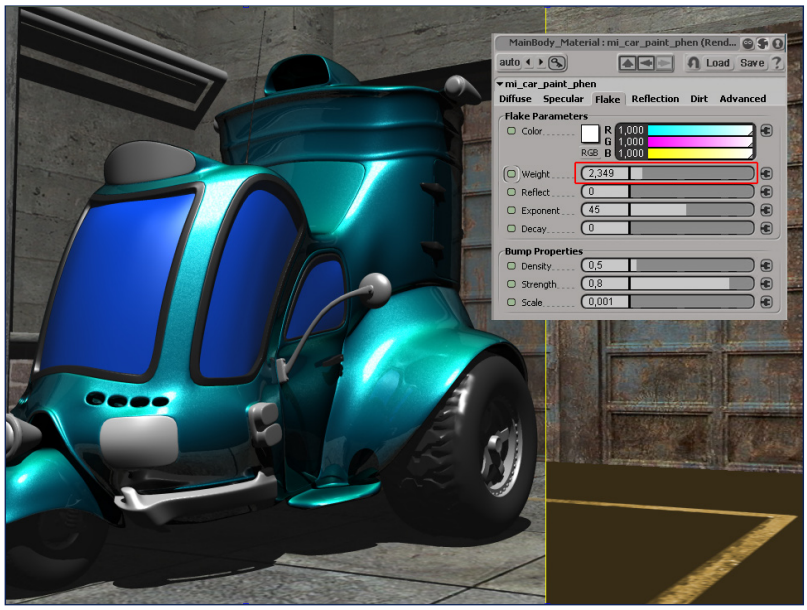


Fig 23

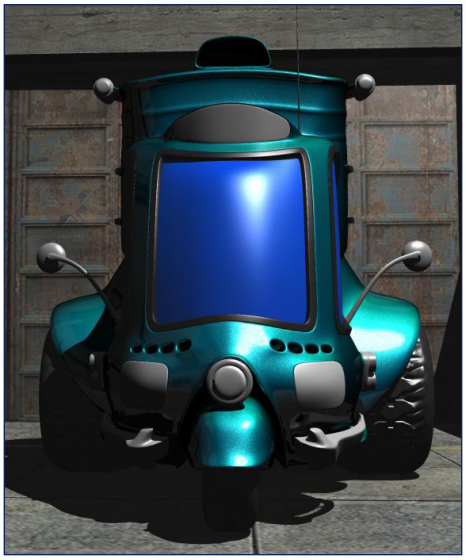
23. In the Flake tab of the mi_car_paint_phen shader, you can find the controls for the flakes effect. In this case only the Weight parameter was changed (and set to 2,349). In case you experience problems with the size of the flakes (it may depend on your scene size), just change the Scale value, which by default is set to the minimum (0,001). If you need bigger flakes, increase this value. You can also alter the flakes' colour (Colour parameter), and Density.

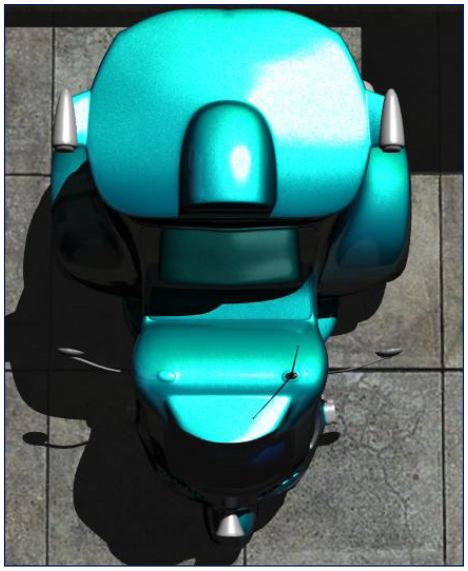


Fig 24

24. Open the Reflection tab of the mi_car_paint_phen and set the Glossy Spread value to 0,02 and the Samples to 10 (the bigger this value, the longer the render time...). In this way we will blur the reflections a little.

Well, that is all for this month. We will slightly change the car paint shader values later on, when we will deal with the illumination task. Next month, we'll see how to create the rest of the shaders for the vehicle.





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Tuc-Tuc



3DCreative
would like to apologise
Due to a Technical
Error, the Lightwave
version of Tuc tuc will
begin next month, with
a double part 1 & 2 Issue.

sorry for any
inconvenience.

Please email
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if you would like
to be sent a link to
download part 1 when
it is available, without
needing to purchase
next months issue.